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Designed to improve all Classes interested in Soil Culture.

AGRICULTURE IS THE MOST HEALTHFUL, THE MOST USEFUL, AND THE MOST NOBLE EMPLOYMENT OF MAN.—WASHINGTON

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April.

"See! See! the shooting verdure spreads around!
Ye sons of men, with rapture view the scene!
On hill and dale, on meadow, field and grove,
Clothed in soft mingling shades from light to dark,
The wandering eye delighted roves untired.

DODSLEY.

It is a glad sight to see the springing grass again. The snow has vanished from hill and plain, and the green blades are appearing above the russet mat in which their roots have slumbered through the long Winter. For months the processes of vegetation have been suspended, and plants have had their rest—a necessary law of vegetable life, in the realms of Winter, and in the lands, where endless Summer reigns. The rest is prolonged by the frost, not induced by it. And now the hybernation is over, the sun quickens that mysterious principle of life in every living thing. The grasses are among the first to feel his genial influences. On the very edge of the snow bank, the soft verdure steals, leaving no moment lost between the retreating Winter, and the exultant Spring. The warm showers descend, the song of birds again breaks on the ear, and man goes forth with joy again, to tread the softened furrows of his fields. Cold must be the heart that feels no glow of gratitude to the Creator, in this genial season.

THE GRASSES,

so common, that we hardly notice them, are among the most beautiful, and useful gifts of Providence. They embrace nearly a sixth part of all the vegetable products of the earth, and are the food, mainly, of those animals most useful to man. They are most profusely scattered in the temperate zone, where they are cropped in Summer by ruminant animals, and, dried as hay, form their Winter food. The meats that come to our tables, are but grass transmuted into fat and muscle, so that it is a literal, as well as a Scriptural truth, that "all flesh is grass."

Nothing can be more beautiful than these lowly plants in all stages of their growth, whether we examine them, one by one, or in masses; with the naked eye, or with the microscope. They are indispensable in producing the pleasing effects of the landscape gardener, or painter. It is the charm of the scene upon canvas, that the carpet of verdure spreads everywhere, girdling the lake, fringing the stream, bordering the woodland, and receiving the shadows of tree, shrub and flower, that lie nowhere so beautifully as upon the green grass. It forms too the charm of every rural home, is the appropriate ground work of emerald, in which ever a gem of the lawn or the garden is set. The most tasteful border for the walk, the carriage drive, or the flower bed, is the green turf. The last finishing stroke to the country residence, is the lawn or grass plot; if not closely shaven, at least always kept clean and wearing a Sunday air.

And these plants are as beautiful, examined in detail, as when seen upon the lawn or the meadow. They arrest attention in the early Spring, by their verdure, refreshing to the eye, after the long glare of Winter snow's and ice. They challenge our admiration, when they begin to send up their flower stalks, and their waving plumes and spikelets, in full bloom, change the hue of the landscape. Put these delicate flowerets under the glass, and the observer will find as much to charm the eye, as in the larger, and more showy occupants of the flower border. Hung with dew drops in the Summer morning, nothing can be finer than the waving plumes of Timothy, or the sparkling furze of red top. The mower has a feast for his eyes that the poet or the painter might envy. Worlds of glittering gems, flashing in the sunlight, go down before the sweep of his scythe, rivaling all that Golconda ever saw.

Over four thousand varieties of the grasses have been noticed, by naturalists, and it is not at all probable, that these embrace all that are in existence. Large parts of the earth have never been explored by man, capable of making correct observations of their vegetable and animal products. Dr. Livingstone, in his journey across the African continent, frequently mentions immense plains, and natural meadows covered with luxuriant vegetation. "The grass of the Barotse valley is such a densely matted mass, that when 'laid' the stalks bear each other up, so that one feels as if walking upon the sheaves of a haystack, and the leches nestle under it to bring forth their young." Again ascending the valley of the Leeba, he says "the grass, which had been burned off and was growing again after the rains, was short and green, and all the scenery so like that of a carefully-tended gentleman's park, that one is scarcely reminded that the surrounding region is in the hands of simple nature alone." It is not at all improbable, that the more thorough exploration of this region, which he is now to undertake, under the patronage of the British government, will bring to the knowledge of the civilized world new grasses quite as valuable as any now cultivated.

Indeed, this whole department of natural history is comparatively unexplored. Of the grasses known to naturalists, but a small part have ever been cultivated, or had their qualities tested as forage plants. A hundred and fifty years ago, Herd's grass was a wild plant on the banks of the Piscataway, without a name. Who knows but that many other grasses among these known to naturalists may yet prove as valuable as this? Something, over two hundred varieties have been catalogued and cultivated in England alone. Hardly a tithe of that number even have been adequately tried in this country. A dozen sorts, probably, cover nineteen twentieths of all the cultivated meadow land from Maine to Texas. It can hardly be supposed, that so limited a number meets, in the best manner possible, all the wants of so great a variety of soil and climate. This is one of the pressing wants of our agriculture, experimental farms, where the value of new grasses, and kindred questions can be determined. A single new grass, that would add but an extra yield of a hundred pounds to the acre, would add millions of dollars annually, to the productive wealth of the nation.

The best cultivators are much divided in opinion, as to the best time of seeding land to grass. The old practice of Spring seeding, which prevailed almost universally fifty years ago, was brought from England by our fathers. It is, perhaps, the best season in that comparatively moist and cool climate. But in our hot, and sometimes dry Summers, it is found, that the seed, sown with oats and Spring wheat, does not catch well. It is choked by the grain in the early part of the season, and, if August and September happen to be dry, many of the plants die out. This fact has led many close observers to seed down their lands, in the latter part of August and September, and to give the seed, the full benefit of a first start. Sometimes it is sown with turnips, or with Winter grain. Where it is desirable to keep the land in grass, the sward is turned over with a Michigan plow, a dressing of manure is harrowed in, and the seed sown, and left to take care of itself. Even where no manure is applied it is found to pay to turn over the sod and re-seed.

But Spring seeding with grain is still the prevailing practice with the mass of our farmers. For clover, it is pretty generally conceded to be the best time, and for ground well prepared, deep, and moist, we have little doubt, that it is a time good enough for all the grasses, if they can have the field. The practice of taking a grain crop, after the soil has been prepared for grass, is a pernicious one, and is on the wane with all good farmers. The grasses want the full benefit of all the sun, and all the rain, from the first start, and are dependent upon these for their future luxuriance, and good quality. The ground will by no means be unproductive the first season. We cut very good herd's grass last July, from seed sown in April.

The economy of sowing a variety of grass seeds upon the same field, is now pretty well established. The clover and herd's grass are commonly sown

together, and some add the white clover, blue top and furze. For this practice it is claimed, that it is the course of nature, sometimes a dozen varieties of grass being found in a single square yard. In seeding with a single variety, it is nearly impossible to form a perfect sod, and the grass grows coarser, and is less nutritious. The appetite of animals craves a variety of food, and this longing is met, in a fodder made up of a half dozen varieties of grass, more perfectly mixed when grown upon the same field, than they can be, by any other process. Those who have thoroughly tried the experiment, claim that, other things being equal, a much larger burden of grass is produced, and the farmer gets the largest profit from his land.

Whatever variety is used, the selection of seed is a matter of great importance. It is best in all cases, where it is practicable, to raise one's own seed, or to procure it of a neighbor, whose habits for clean cultivation are well established. If this can not be done, procure the seed from responsible salesmen, who have a personal acquaintance with the parties who produce it. You want clean seed, and that of the last season's growth. Old seed will not all come up. The temptation to mix old seed with new is very great. Seed is sometimes mixed with Canada thistles and foul weeds, and these, when sown, are an irreparable injury and sorrow to every good cultivator.

Calendar of Operations for April 1858.

[We note down sundry kinds of work to be done during the month, not so much to afford instruction to practical men, as to call to mind the various operations to be attended to. A glance over a table like this will often suggest some piece of work that might otherwise be forgotten or neglected. Our remarks are more especially adapted to the latitudes of 38° to 45°; but will be equally applicable to points further North and South by making a little allowance for each degree of latitude, that is, later for the North, earlier for the South.]

EXPLANATIONS.—*f* indicates the *first*; *m* the *middle*; and *l* the *last* of the month.—Doubling the letters thus; *ff* or *mm* or *ll*, gives particular emphasis to the period indicated.—Two letters placed together, as *fm* or *ml*, indicates that the work may be done in either or in both periods indicated; thus, work marked *fm* indicates that it is to be attended to from the first to the middle of the month

FARM.

A busy month to the farmer is April. The favorable Winter for out-door operations has given him ample time to do all that pertains to Winter proper, and anticipate Spring, even. We will premise that grain is threshed, marketing nearly done, fencing material provided for, a year's stock of firewood cut, split and stored under cover, and a good supply of rich manure and compost manufactured at the stables, yards and hog pens. If leached by the Winter rains and drippings from the eaves, a large portion of its best properties may have found their way into the highway or upon a neighbor's premises. With a resolve to be wiser in future we will now look to those things needing especial attention this month, commencing with the

Bees, which should be arranged in their Summer quarters, ff, and the hives examined for moths. Kill all worms or cocoons now found and thus prevent increase. Clean off the bottom board and save the bees several days labor.

Buildings—This is house cleaning month for the women and it is presumed they need no directions. Let the men cleanse, and whitewash fences, and put everything in a neat attractive and healthy condition.

Cattle—Do not turn off too early. In this latitude they will require feeding nearly through this month if not longer. Keep from tramping up mowing grounds. Cows about calving need especial care and close watching. Oxen are now performing heavy work; feed them accordingly.

Cellars—Cleanse thoroughly, whitewashing the walls and carrying away all dirt and rubbish collected during Winter. Open the windows for ventilation.

Clover—If not sown with Winter grain last month, attend to it, ff Sow, ll, with Spring grain.

Corn—Manure and plow grounds for planting next month. Provide and test seed previous to use. See article on proving seed in the present number,

Door Yards—Clean up the Winter accumulations of chips and dirt, adding the latter to the manure heap. Paint or whitewash fences and make everything attractive and pleasant. A very little work of this kind will be felt all through the Summer.

Drain grounds as opportunity offers, f, m, l.

Fences—Repair the old. ff, and make new ones of both wood and stone, f, m. This is a good season to plant hedges also. Employ rainy days in making gates, which are much more convenient than bars.

Grain—Sow Spring wheat and rye, f, to m, oats, barley and peas, m, to l. Allow no animals to feed upon the Winter grain fields.

Hedge Rows along fences should now be cleared up that the plow or mowing machine may make clean work.

Horses—Attend to mares with foal, giving them ample space at night. Have working teams of horses and mules in good condition for heavy labor.

Lucern—Sow, ll.

Manures—Cart and spread on lands no faster than they can be plowed in. Fork over, ff, heaps carted out during the Winter. Continue to make in all possible ways, mixing with them the wash water and "chamber lye."

Meadows—Keep fenced and free from cattle. Beat and scatter the little manure heaps dropped by cattle during the Winter. Pick the loose stones and cart away any heaps previously made, leaving nothing in the way of the mowing machine and horse rake. Sow grass seed on any bare spots. Read article on "Meadows and Mowing Lands" on a subsequent page.

"Plow deep while sluggards sleep"—and prepare the land for planting and sowing. If you own 50 acres of tillable land, make it 75 by going down one half deeper than formerly. The subsoil belongs to you, and you may as well have the benefit of it.

Potatoes—Plant early ones, m, l, selecting good market varieties not subject to rot. Try, say 10 bushels of coarse salt spread over an acre of land at planting time, and note the results. Read potato article elsewhere.

Poultry—Set hens, ff, for early chickens, and feed the young with care during the first few weeks. Feed cracked corn as soon as chickens can swallow it. Read the full chapters on poultry in the February and March numbers. Cleanse the houses thoroughly, using the manure for corn, or in the garden. Whitewash about the roosts and dust with plaster.

Root Crops—Prepare grounds for, manuring and plowing deep. Carrot seed may be sown, ll.

Sheep may, perhaps, now be dropping early lambs and need warm shelter at night. Keep separate from other stock and well fed.

Swine are also increasing in numbers, if proper care has been exercised. Keep charcoal and ashes accessible to them and give a little animal food which will frequently save the offspring from being eaten. The mother should have plenty of warm liquid food.

Timothy—Sow, ll, with Spring grain, and on bare spots of old meadows.

Tools for Summer use should all be made or procured at once Throw away the old if you can do twice as much with a new implement. Let them have appropriate places under cover and be kept there when not in use.

Trees—Set out for shade and fruit along the roads and lanes and about the yards. A shade tree near the house may very properly be a well trained cherry tree which is ornamental at *two* seasons of the year.

ORCHARD AND NURSERY.

April is a busy month in both of these departments, especially so in the latter. A comparatively small amount of trees were sold last Fall, owing to the commercial crisis, and are the nurserymen already hard at work this Spring, filling orders which were kept over till now. To facilitate the labor as much as possible, collect from the nursery a quantity of each variety of trees, and heel them in where they can be handily drawn from. Any one intending to plant a new orchard this Spring should early visit the nursery, and make his selections, see the trees carefully taken up, and again reset on his own ground. Read "Selecting Trees for planting" on page 115.

Old trees that were cleared from rough bark and moss, and washed with soapsuds last month, now need something for the roots to feed upon, especially if the ground has been in sod for many years. Better plow it up after manuring heavily, and plant potatoes upon the ground that it may receive the benefit of a hoeing. Many of the old trees will be greatly improved by grafting, and the first days of this month are the apropriate season for this operation.

Apples.—Plant standards for orchards and stocks for future growth, ff, m, l. Graft old and young trees at the same time.

Apricots, Almonds, and Nectarines.—Plant, ff, m.

Cherries.—Complete grafting and planting, ff, m.

Currants and Gooseberries.—See Kitchen and Fruit Garden.

Dwarf Pears, Apples and Cherries.—Plant a few, ff, if you have not room for standards. Look well to the varieties, especially of pears. Graft, ff.

Figs.—Plant, layer and strike cuttings, f, m.

Grafting.—Perform, ff, m, commencing with the cherry. A stock or branch 1 to 1½ inches in diameter is the best size. Saw it off and pare smooth with a sharp knife Split it through the heart for two inches in length, using a thin blade, cutting the bark as smoothly as possible. Drive a small wedge in the center to hold the split open while the scion is fitted in place. Six inches in length is sufficient for the scion, containing, say two good buds. Pare to a wedge shape, making the scarf an inch long and a little the thickest upon one side. Insert it with the thickest edge upon the outside, *taking care that the inner barks of both scion and stock coincide with each other* This is absolutely necessary to insure growth. Having placed a scion upon each side, withdraw the wedge, and cover with grafting clay, or a wax made of two parts resin, and one of beeswax, adding tallow enough to soften it, so that it can be worked in the hand. Coat the end of the limb so that no water can run between the scions. Cover the slits at the sides in like manner, to exclude air.

Hedge Plants.—Sow seed for, ff, m. Head back plants which are to grow another year in the nursery.

Inarching may be done, fm, on deciduous, and ll, on evergreen trees. (See illustrated article on page 184, Vol. XVI.

Insects.—Search for borers among apple and peach trees, ff. Destroy all cocoons in the branches, or under the rough bark of old trees.

Mulch newly planted trees, especially in dry weather.

Packing trees.—See page 117.

Peaches.—Plant, ff, m.

Pears.—Plant and graft, ff, m, l. (See chapter IV of "Orchard Culture," page 114.)

Planting and Transplanting generally.—Commence as early in the season as the ground can be worked. Other things being equal, early planted *deciduous* trees and shrubs usually do much better than those set out later in the season.

Plow old orchards and among nursery rows, ff, m.

Plums.—Plant, ff, m. Cut away any warty excrescences or "black knot" at the same time.

Prune very lightly this month—Read the illustrated article on page 116.

Quinces—Set out, ff, m, l, both for standards and as stocks to work the pear upon. Let these last be the *Angers* variety.

Scions must be cut at once, if not already secured. The buds are already swelling.

Shrubs—Plant deciduous, ff, m.

Stocks—Plant out as early as possible, that they get a good hold before dry weather comes on.

Vines—Plant, ff, m, both roots and cuttings.

KITCHEN AND FRUIT GARDEN.

April is a busy month for the gardener. Already he has commenced spading, trenching, and plowing his grounds, and by the close of the month will be putting in many of the early vegetables. Better leave working the ground until it is sufficiently dry, especially if inclined to clay. A sandy soil is sometimes rendered more compact by spading or plowing, when too moist. A good coating of clay is, however more liable to compact, and a covering of sand or peat will be of great benefit to clayey soils. Except for early use, or marketing, we do not advise haste in planting. It is better to let the ground get warm, and in condition to push the plants into rapid growth as soon as they are consigned to it.

Asparagus—Remove the covering of old beds, manure and fork over, ff; sow seed and plant a new bed, m, l.

Bean Poles and Pea Brush are supposed to be in readiness for use. If not procure at once.

Beets—Sow, ll, for an early crop. For winter use, leave till next month.

Blackberries—Plant out, ff, m.

Borecole, Broccoli and Kale—Sow, ll.

Cabbage and Cauliflower—If it appears like settled, warm weather, plant from hot-beds and cold frames, ll; sow more seed at the same time. Avoid hog manure for them.

Capsicum—Sow, ll.

Carrots do best sown early—say, m, l. Let the ground be deeply worked and well manured.

Celery—Sow, ll.

Cold Frames—Give abundance of air, and remove the most hardy plants.

Plant a portion, m, ll, for early use. Save space for successive plantings.

Cucumbers, Melons and Squashes—Plant, ll, if on warm, dry soils,

Currants and Gooseberries—Plant cuttings and rooted bushes, f, m, or as soon as the ground is in working order. See page 117.

Drain moist lands, ff, m. An investment for tile-drains in a wet garden soil, will pay a better per centage than in Bank Stocks.

Egg Plants—Sow seed, ll. Leave plants in hot-beds till next month.

Fences—Make, or repair any needing it, ff.

Figs—Uncover, f, m, any which have received Winter protection.

Fruit Trees—Set out as early as the season will admit

Garlic—Sow, m, l.

Grafting—Perform on fruit trees, ff, m.

Grapes—Plant vines and cuttings, f, m. Uncover, ff, any protected vines.

Herbs—Set out hyssop, thyme, rue, sage, savory, &c., l, m.

Hops—Plant roots, f, m,

Hot Beds—Closely water them, now that the plants are of some size, and the sun warm. Raise, or remove the sash each day. Some of the plants may be put out, ll, using the hand-glasses, described and illustrated on page 117, for protection. New beds may be made and sown. ff.

Horse-Radish—Divide and reset roots, ff, m. See article elsewhere.

Kohl Rabi—Sow, m, l, for early use.

Leeks—Sow, f, m, l.

Lettuce—Sow as soon as the ground can be worked, and follow at intervals of two weeks, till August. Plant from hot-beds, ll.

Manure grounds thoroughly, if you wish full returns for your labor. Well rotted manure is desirable for gardens.

Mushroom Beds—Make, f, m, l. See page 262, of vol. XVI, for full directions.

Mustard—Sow at any time after the ground is open, and at intervals for a succession.

Nasturtiums—Sow, m, l.

Okra—Sow, ll.

Onions—Sow, m, l, and put out sets or bulbs at the same time See article on page 108.

Parsley—Sow, f, m, l.

Parsneps—Sow, f, m, l, on trenches or deeply-worked soil.

Peas—Sow, f, m, l, for succession, scalding previously to destroy the insects' eggs. Stick when a few inches high.

Radishes—Sow at any time after frost is out of the ground, and at intervals of a few weeks throughout the season. Scatter among beet seed, over the asparagus bed, and among vines. Pulled early, they will not interfere with other plants.

Raspberries—Uncover buried canes, f, m, heading back and staking up at once. Make plantations at the same time. See article on page 117.

Rhubarb—Remove covering, ff, and fork around the roots, working in a good quantity of manure. Set roots and sow seed, f, m,. Early planting is very desirable.

Salsafy—Sow, m, l, as directed elsewhere.

Sage—Divide roots, and sow seed, f, m. l.

Seeds—Test the goodness, by trying a few before sowing your whole garden. A day or two is sufficient to prove them, if kept near the stove, on moist cotton. Set out turnips, beets, carrots, parsneps, onions, cabbages, cauliflowers, parsley, leeks, salsafy and kohl rabi for seed. Keep the different varieties of the same species at a distance from each other, to prevent mixing.

Spinach—Sow at any time after the frost is out, and at short intervals, till Midsummer, to have a continual supply.

Strawberries—If not already done, remove the covering from old beds, ff. Plant out new ones, m, l.

Tomatoes, both the common kind and the strawberry variety, or Winter cherries—Sow seed, f, m, l. Plant from hot-beds, ll.

Trench garden soils, or subsoil before planting.

Turnips—Sow strap leaf and other quick-growing varieties, f, m, for early crop. Rutabagas, except for early use, should not be sown until May or June.

FLOWER GARDEN AND LAWN.

There is much to do here at this season, especially where the directions of last month have not been attended to. Read them anew and attend first to the operations there pointed out. Except on very warm borders, sowing of annuals and other seeds may be left till the last of the month, or even until May, but it is important that transplanting of deciduous trees, shrubs and flower roots, be done early. They will give better satisfaction every way.

Annuals may very properly be sown, m, ll, especially such hardy ones as asters, balsams, candytuft, coreopsis, clarkia, coxcomb, eschscholtzia. hibiscus, larkspur, lavatera, marygold, mignonette, nasturtium, phlox, portulaca, scabious, &c.

Biennials, and Perennials—Transplant, f, m, dividing the roots to increase the supply. Sow seed, m, ll. Among these are carnations, pinks, daisies, chrysanthemums, lilies, sweet williams, yuccas, peonies, columbines, hollyhocks &c.

Borders—Prepare, ff, m, for sowing and planting. Dig deep and manure well.

Box and Grass Edgings—Set new and repair old, f, m, l Trim the old evenly.

Bulbs—Hyacinths, tulips, crown imperials &c., are now growing rapidly, and will be blooming, m, ll. Put the beds in order and erect screens over the choice ones to prolong the period of bloom

Dahlias and Gladiolas—Place in boxes, m, ll, for starting. Expose during mild days, taking in during cool weather.

Dielytra—Plant out, m, l.

Drain all wet grounds if a good garden soil is expected. They may be worked much earlier, and are warmer for it.

Evergreens—They may be planted, m, ll, but better during the early part of May. If other work will prevent planting, do it the latter part of this month rather than not at all.

Frames and Pits—Transplant from them, m, ll, if the weather is sufficiently settled.

Gravel—Renew the old and make new walks, f, m,

Hedges—Set deciduous hedge plants, ff, m. and evergreen, m, ll, or later.

Hot Beds—See that they are carefully attended to, as directed under Kitchen Garden.

Labels for marking the flowers, and stakes and dahlia poles should all be procured at once.

Lawn—Put everything in a neat, attractive order, raking and rolling the turf, sowing seed on bare spots, or resodding. Sow new grounds, f, m, the earlier the better.

Prune, ff. any vines or shrubs neglected last month.

Petunias and Verbenas—Sow seed, m, l, and set or bed rooted plants, ll.

Roses—Plant, ff, m. Tie up pillar and climbing varieties.

Shade Trees—Plant deciduous kinds, ff, m.

Shrubs—Plant, ff, m, the althea, flowering almond, azalea, chionanthus, flowering currant, deutzia, euonymous, holly, Japan quince, laburnum, lilac, philadelphus, rose acacia, snowberry, snowball, spiræa, tree pœony, weigelia, &c.

Vines and Climbers—Plant, ff, m, bignonia, clematis, honeysuckle, ivy, trumpet flower, virginian creeper, wistaria, &c.

GREEN HOUSE.

Fire heat may be mostly suspended this month. The house should be well ventilated, opening it on all mild clear days as soon as the sun is well up, and only closing at sun down. Many of the plants are intended for the open border in May, and should now be undergoing the hardening-off process. Plants which are now growing rapidly will throw up weak shoots without this airing.

Bedding Plants—Have a good supply in process of cultivation. The stock of verbenas, petunias, geraniums, daisies, pansies, &c., may still be increased by dividing the roots, layering, and by cuttings. Gradually harden them for out-door culture.

Bulbs—Many are still in bloom, while a portion have shed their flowers. Keep the former in an airy part of the house, well watered, and plant the latter in the open border to dry off.

Callas—Water freely now that they are in bud and flower. Cleanse the leaves often and turn toward the light.

Camellias are mostly out of bloom. Syringe freely, and insert cuttings of the well ripened wood.

Cuttings—A large proportion of the plants may still be increased in number by cuttings. Select well ripened wood, and having inserted them thickly in prepared soil plunge the pots in the bark bed for a bottom heat. A bell or other glass placed over them will facilitate their rooting.

Grapes—Vines are in different stages of forwardness according to the heat of the house. Disbud, train up shoots and syringe freely, mixing a little sulpher in the water to prevent mildew.

Head back and pinch in plants with ill shaped heads.

Inarching—Oranges, lemons, limes &c., may now be inarched. (See full description and illustration of the process, page 184, Vol. XVI.

Insects—Watch carefully for and destroy as previously recommended.

Mildew—Dust plants and flues with flour of sulphur, where there is any appearance of mildew.

Pot off annuals sown last month.

Seeds—Sow annuals early, for planting in the borders. Vegetables may be forwarded by sowing in pots in the green-house and afterward transplanting to the kitchen garden.

Shifting—Continue to re-pot all those whose rapid growth indicate a want of more room. Give fresh earth to others.

Water more freely as plants are growing more rapidly.

HOT-HOUSE AND CONSERVATORY.

The directions of last month are mainly applicable to this, save, that less heat will be necessary. During the cold, windy days, and frosty nights, however, the furnaces will need careful watching. A chill at this season would be very disastrous.

The houses will need more air as the weather grows warmer, and the stock of plants increase in size and number.

Cuttings—Make and treat as in Green-House.

Flowers in Pots—Bring in from the Green-House for blooming.

Fuchsias—Water more freely as they approach the blooming season. Increase the stock by cuttings.

Grapes—Thin bunches of the early forcing; rub off superfluous shoots, and confine branches to wires. Use sulphur to prevent mildew.

Insects increase rapidly this month, if not kept in check. Fumes of tobacco, syringing and hand-picking are the destroying agents.

Pines are now setting fruit—Maintain a natural tropical atmosphere by evaporations, to produce dews at night.

Seeds—Sow the different varieties of hot-house plants, to keep up the stock.

Shiftings—A large number of plants will need more room at this season. Shift to larger pots, ff.

Syringe freely towards evening, both to dislodge insects and promote a humid atmosphere.

Water—An increased supply will be necessary, as the plants are now growing rapidly. See that the drainage is perfect

THE APIARY IN APRIL

BY M. QUINBY.

During this month and next, more can be effected towards destroying the moth-worm than in all the rest of the season. All outsiders are now frozen to death; only a few eggs and larva that have been kept alive by the warmth of the bees inside the hive, are left, and these now commence operations. The bees drag them out of the combs, and drop them on the floor, where they may be found during the cool mornings, and destroyed. Search thoroughly, as every one that escapes may generate hundreds, or perhaps thousands, before the end of the season. ....If any stocks are weak, it is important to ascertain which they are, that they may be particularly guarded against robbers. It is much better to guard against the beginning of evil than to cure it afterwards. Close the entrance, allowing only one bee to pass at once. Keep a look out on every real warm day for the robbers to commence. Do not mistake a few fighting outside for evidence of pillaging; it is often a good sign, and indicates courage for defence. Visit them after sundown on such days. Sometimes the bees around a weak hive show unusual activity at the time; these are robbers, and if let alone, will appropriate every particle of honey, while the owners seem to look on with the utmost indifference, and make no effort to save themselves from famine. To break up this habit, it is hardly worth while to resort to many of the common methods recommended, particularly the one of moving the hive to different places, unless the distance be at least a mile. The least trouble is, to confine the bees in some way that will admit sufficient air into the hive, and carry it to some dark room, until two or three warm days have passed, when it may be returned to its stand, and watched as before....Graduate the entrance of all the hives to accommodate the bees that are to pass. ... Take advantage of the first stormy day, to get hives and boxes in readiness; scald, and scrape clean the inside of old hives, and they will answer to use again. If any are to be painted, it should be at once attended to, that they may be thoroughly dry, and lose the rank smell of the paint....Put up a small box near the hive for the wren to nest in. This bird is a great help in catching the worms....Erect a fence to break the force of the prevailing winds.....Let the sun strike the hive in all moderate weather.

Hints on Farm work for April.

(The following, and the hints on the preceding page were prepared by two different Editors residing 400 miles apart. They run somewhat in the same channel.)

Let the fences all be repaired as soon as possible, if any of that work is left over from last month.

Get out the manures and composts for the Spring and Summer crops. In this, better fertilize half the ground *well* than go over the whole with only a scant supply.

If the meadows have not been already top-dressed with manure for the season, they had better be postponed till after haying, as the raw portions of the dung will remain, and be in the way of the scythe, and mowing machine. Besides this, the soil will be badly cut up by the teams, and wagon, or cart wheels, doing it more hurt than the dung will do it good. Let the loose stones be also picked off the mowing lots, and carried off altogether. Putting them in heaps, large, or small, only gives a harbor for mice, moles, and other vermin intent on mischief.

Clean up the door and wood yards of their

Winter litter. Put the chips under cover, if you have any, and pile up all stray and loose lumber. Rake and pitch together the litter of the barn-yards where it can rot down in to muck or compost. "Slick up" generally, so that the whole premises may look tidy and comfortable.

This is the month to set out shade and fruit trees. Dig large holes—"not as big as your hat," but three, four, five, or six feet in diameter, so as to give ample space, and more too—for the roots, which the trees now have, but for the young fibres that will strike from them in the next year or two.

Put in the plows for the coming crops. Plow *deep* not while sluggards sleep only, but plow deep *always*. Recollect you have a most excellent farm right *below* the one you now occupy and only about six or eight inches under it, where the roots of your previous crops have seldom penetrated. Only work into this *new* farm thoroughly, say three to six inches, and let it see daylight by throwing its fresh soil up to the sun, and the effects, after the first year or two will surprise you. Don't mind the "hard plowing." Put on an extra team or two; or if you have not that extra team of your own, change works with a neighbor, and you will be well compensated in the crops—next year, if not this. Don't be afraid of that "nasty yaller clay," or that "leachy gravel," or "poor, sandy stuff," if it does come up. If not quite as good the first year, it will be the second, and soon you will have a deep rich soil a foot deep where you only had from two to six inches before. When well plowed, and the surface dry, put on the harrow, the teeth sharp, and thick, and tear it up as finely as possible for the young seeds.

Plant early potatoes as soon as the ground is warm enough. Let the peas, barley, Spring wheat, and oats be in as soon as possible. One day of early Spring growth is worth a week of June or July in giving a thrifty stalk and well filled head.

Fix the ground for corn, and beans, the latter part of the month, and let it lie up to the sun to thoroughly warm, so as to be ready to plant in good season—the *right* time to plant you know better than we do, as we are ignorant of the exact place you live. Corn ought to come up quickly, and then grow right on, without stopping a day till it ripens. Stunted corn, be it either by cold in the ground after planting, or frost, or drouth after it comes up, never gets forward like that which has no pull-backs. And in a corn country like ours, where we rely largely on that crop to make our meats, as well as to sell, and eat, it should receive the very best part of our attention.

If the apple, and other orchard trees have not been pruned all they need—and which is not much, if they have been attended to as they ought to have been years before—take off the useless sprouts and limbs of the last year's growth. Cut out the broken branches, if there be any; put crutches under and straighten up the leaning trees; throw the head into shape, and let them go on rejoicing in the protection of a good master who appreciates their value.

Get the tools all into order, and keep them so. When the field is plowed bring the plow in, and put it under cover; so with the harrow, and other tools. Have a place for them, and let them be in their place, so you can put your hand upon them in the dark. The same with shovels, hoes, axes—indeed everything you work with on the farm, as sleds, wagons, carts, inclusive.

The cows are now bringing their calves. We have already told you how to manage them, as well as the sheep with their lambs. Look back to our March number, page 68, for the latter.

Young colts usually drop in this month, and May. Look well to the mares about this time. Don't work them hard for a few days before, and after dropping the foal. A *sweated* mare is more injured in the way of her milk for the young foal than is almost anything else. She may work constantly after the colt is a week old, but the work must be uniform, and not hurried. Her blood must be kept equable, and her feed generous. Chopped hay, or straw with meal of some kind is the best, being easy of digestion, and producing plenty of milk.

Let the cows be still stabled every night until the weather is warm enough for lying out. Cows are just as liable to catch cold by exposure as *folks* are, and as their coats are now coming off they are thinner haired than usual, for a month or more.

In short, look well to everything about the place. "Whatsoever your eye sees, or your hands find to do, do it with all your might, and in good time." "Eternal vigilance is the price of"—success in anything, except a windfall of good fortune; but as we "common folks" have no especial expectations in that line we must trust to our own stout hands and willing minds for the achievement of what good fortune is to attend us in life, and as "April fool's" day is now past, we hope the balance of the month is going to be appropriated to the getting of wisdom, and understanding, as well as the getting in of our future crops, on which our success for the whole year is to rely. April is, perhaps, the most important month in the whole season.

Sow Clover Seed Now.

We have found no more successful mode of sowing clover, or clover and timothy upon winter grain fields, than to choose a still morning, when the ground is a little frozen, and scatter the seed broadcast. It falls in the open frost-cracks, and when thawing takes place, is beautifully and uniformly covered near the surface, and is almost sure to germinate. A good crop of clover, thus sowed, acts partly as a mulch to the grain roots, yields a supply of Fall feed, and is most admirable to be turned under when "knee high" the next year, as one of the best manures that can be applied to any soil.

Early Plants—A First-rate Way to Start Them.

A very convenient method of starting early corn, sugar-cane, cabbage, tomatoes, cucumbers, and indeed almost any kind of plants, is the following:—Take an under sod (not too grassy,) or tenaceous muck and cut into cubes, say two inches each way. Insert one or more seeds in the center of each, and then pack the pieces closely together and firmly down upon a box of earth, to be kept moderately moist. This box can be set in the cellar on frosty days and nights, and be carried out into the sun at other times. When the seeds are up and transplanting out is admissible, take up the cubes and transplant them to the open ground. This can be done without disturbing the roots, or scarcely retarding the growth of the young plants.

Seeds of cucumbers, melons, tomatoes, &c., are sometimes planted in soil placed in old or cheap baskets, with rather open work. These are hung up out of the way of frost, being exposed to the sun during the day. At the proper time these baskets are simply imbedded in the hill even with the surface, and left there. The roots will find their way out into the soil through the open-work of the sides. A few hills thus started, with little trouble, will often produce a crop some weeks in advance of those sown at first in the open ground.

Seed Potatoes for New York Market.

To the Editor of the American Agriculturist.

As the time approaches for farmers to make selection of potatoes for planting, it is important that they should be acquainted with the kinds which will pay best, taking yield and market value into consideration. There is but one true standard for the value of a potato, viz., one that will yield a fair crop, be clear as possible from rot under ordinary circumstances, and command the highest price in market. The value put upon his potatoes by purchasers and consumers is of vastly more service to the farmer than the opinion of those having fancy varieties to dispose of. As a general rule it is better to raise those kinds for which there is already a market, rather than create a market for new varieties.

The great requirements of the New-York market which in ordinary times consumes or disposes of about 8000 *bushels per day*, are a large sized, smooth, white fleshed potatoes that will cook dry, mealy and white. The color of the skin is not of much consequence although a white or light colored one will generally command the highest price. The usual test is boiling, to serve up whole. In the mercer variety of potato the whiter the skin with the least purple color inside the better. Those raised on sandy soil will command a higher price than those from heavy or clayey loam, as they uniformly cook better. In shape, long or oval varieties are more saleable than round ones, other things being equal.

In preparing for market, too much care cannot be taken to sort out all the small ones, so as to make them a uniform size. The customary mode of selling potatoes in New-York, is by the barrel, taking an ordinary flat-hooped flour barrel holding two bushels and three pecks, for a model. The kinds coming to this market and those which are well known, with their *relative* value—taking good sized light colored mercers at $3 per barrel as a standard—are given below. Farmers should bear in mind in selecting seed that the cost of transportation and handling, is no more on potatoes worth $3 to $4 per barrel, than on those worth only $1,25 to $2, and the cost of raising is but little more.

Elgie, a small yellow-fleshed potato is the earliest variety. It was formerly much raised by the Long Islanders, but now nearly superseded by the

Dykeman, which is generally considered the best early variety. It is also known under the name of the Excelsior, is a good yielder, growing large, sound, and smooth, the skin slightly mottled with purple, and having a mottled eye, with white flesh. It wholesales readily at $2,50 per barrel. The Long Island and New-Jersey farmers raise them largely for an early crop.

Mountain or Early June.—A large sized, round, white-skinned, and white-fleshed variety, resembling the Dykeman in all except the color of the skin and eye. It takes about a week longer to ripen, and sells generally at 25 to 50 cents per barrel less.

Mercer.—One of the old favorites, but which has been failing of late years. Those raised on Long Island and New-Jersey, from the whiteness of their skin and flesh, together with their smoothness, usually command and advance over those brought from other sections. They are the standard potatoes of this market, and, under favorable circumstances answer very well for a general crop.

Carter or Biscuit.—A roundish potato, with deep eyes, white skin and flesh, and with scarcely an exception, the best cooking potato we have; but, like all the fine old varieties, they are liable to the disease. They yield about two-thirds as much as mercers, but when raised on light soil will sell for more money, being worth $3,50 per barrel. They are liable to be mixed with Junes, very much impairing their value.

Kidneys.—The old fashioned Fox-eyed Kidney is a good potato, and one that sells well, but a poor yielder; has given way to the Long and Blue Pink.

The Long Pink is a long, white-skinned and white-fleshed potato with a pink eye—a good yielder, and a first rate potato. It sells at $3 to $3,25 per barrel. The Blue Pinks are a roundish, blue-skinned potato, with white flesh. They are good yielders and keep well—sell at $3 per barrel.

Peach Blow.—A good sized, white-fleshed potato, the skin parti-colored of red and white, one end being red, the other white. It is a first-rate potato, yields more than Mercers, keeps well, and on sandy loam, is free from disease, and is one of the very best new varieties, cooking dry, white, and mealy; worth $3,50 per barrel.

Prince Albert—A long kidney-shape, white-skin, and white-fleshed variety, free from disease, keeps well, fair yielder, but a poor potato to cook, boiling wet and soggy. This is a fancy sort little known as a market potato; its freedom from disease being its greatest merit. [We esteem it very highly.—Ed.]

Yellow Pink Eye and English White are round, white-skinned, yellow-fleshed potatoes, differing only in the color of the eye, which is pink in the one and white in the other. They are common varieties, but are in good repute as shipping potatoes as they stand a sea voyage better than any other kind. They yield much more than Mercers, and are mostly free from disease—worth about $2 per barrel.

Western Red.—The name given to all the round, red-skinned yellow-fleshed potatoes coming to this market. They are common, and are used mostly for mashing by the hotels. They are the kinds sent South for seed which were returned here in the Spring as "Bermuda potatoes"—the change of soil and climate making a great difference in the quality. The Reds are good yielders, and on dry soil generally escape the rot—worth $1,62 to $1,75 per barrel.

Merinoes are old varieties and worthless in this market. They are replaced by the

Californias which are no better, being a coarse, rank potato, and not saleable in a well stocked market—worth $1, 25 per barrel.

Black Mercer.—A long, smooth, purple-skinned, white-fleshed variety—in shape long and flat, They are a good Spring potato, but unless planted on dry sandy loam are liable to rot. They are large yielders, and make a good solid, late Spring potato. Worth $2,50 per barrel.

Purple Mercer.—A variety not saleable on account of cooking black. They are a dry, mealy sort, mostly free from the dry rot—worth $1,50 per barrel.

White Mercers are large, long, white-skinned and white-fleshed potatoes, good yielders and good Spring potatoes—worth $2 75 per barrel.

Scotch Greys.—Round, blue-skinned, white-fleshed, slightly marked with purple. They are first-rate potatoes, cooking dry and yielding about the same as Mercers—worth $2 50 per barrel.

Michigan Whites, are long, white-skinned and white-fleshed, yielding well, but poor table potatoes, as they cook wet—worth $2 25 per barrel.

Rock Whites, or Rock Kidneys, are a medium white-fleshed potato, growing large and round. They yield well and are in good demand as a shipping potato—worth $2 25 per barrel.

There are several other varities, both of the fancy and common sorts, but of little value as market potatoes. Among these are the Mammoth Nutmegs, Early Sovereigns, Lady Fingers, Cowhorns, Cups, &c. B. Stephens.

New-York, March 1, 1858.

1 2 3

Fig. 1. *Improved Yellow Flat Onion*—(No. 53).
Fig. 2. *Improved Brown Globe Onion*—(No. 54).
Fig. 3. *Improved White Globe Onion*—(No. 55)

Onions, Peas, Carrots, &c.

Our Foreign Correspondents are from time to time forwarding such choice seeds as appear there. We recently received from them *eighteen* parcels, with which came some specimens of the three varieties of onions represented above. These are (March 22) still "sound as a bell," and we think they are worthy of a trial here. Accompanying them were parcels of seed which we shall offer in premiums, as noticed on a subsequent page. The White Globe Onion, fig. 3, is of the *form* most desirable. The Brown Globe, fig. 2, is nearly perfect, while the Yellow Flat, fig. 1, is an improvement upon the old flat varieties. If these flourish well here, as we think they will, they will be an acquisition.

Peas.—We have, also, five new varieties of Peas not yet introduced here, which come highly commended. They are thus described to us:

Mrs. O'Rourke (No. 56).—A new, early, dwarf, branching, blue Marrow Pea; hight 2½ feet.

Eugenie (No. 57).—The earliest white wrinkled Marrow Pea in cultivation, podding from the bottom of the haulm to the top, with fine, large pods.

Napoleon (No. 58).—The earliest blue wrinkled Marrow Pea in cultivation, podding from the bottom of the haulm to the top, with fine large pods.

The above two Peas were originally saved from one pod. Mr. Harrison, the raiser, describes them as follows:—"Relative to my new Peas, the Wrinkled Blue and Wrinkled White, I beg to say that they are very superior to those I sold last year (meaning Climax and Alliance); they are stronger in habit, much truer and better filled in the pod—on an average two more Peas—also, better croppers; my average growth this year was nearly ten quarters per acre. The above range from 2½ to 4 feet.

King of Marrows (No. 59).—Undescribed, but commended.

Blue Sickle Pea (No. 60).—Undescribed, but commended.

The other seeds are: 61, Waite's Bedfordshire Prize Cucumber—very long, slim, and much esteemed, growing freely in the open ground; 62, Waite s White Cos Lettuce; 63, London Particular Long Scarlet Radish; 64, Extra Red Round Turnip Radish; 65, Waite's Large Cabbage Savoy; 66, extra London Curled Parsley; 67, Intermediate Carrot, very fine flavor; 68, Purple-top Scotch or Bullock Turnip; 69, Green-top do.; 70, Waite's London Purple-top Swede Turnip.

Nos. 56, 57, 58, 59, 60, 61, 62 and 63 will all reproduce their seed the first year. We shall wait the result of this year's trial, and add to our next Annual Seed Distribution as many of the above varieties as prove valuable, particularly of Nos. 53, 54, 55, 64, 65, 66, 67, 68, 69 and 70, since these cannot be multiplied here this year. We hope that those obtaining these seeds in accordance with our proposition, will take particular note of them and let us know the results.

Culture of the Field Seeds Distributed.

The directions for Garden and Flower seeds are given on page 118.

White Sugar Beets, (1).—This and all other varieties of beets require a *deep*, rich soil. The seed may be sown as soon as the ground will work well, though the middle or latter part of May will do quite as well for this variety, when designed for Winter keeping. Put in rows about 2 feet apart and the seeds about 5 inches apart, to be thinned out alternately to 10 inches, if all the plants grow. Cover about ½ to 1 inch deep. A little bone dust (unburned), worked deeply in the soil below the drills, has a marked effect. This variety is mainly adapted to feeding, except where sugar is made from it, though they are frequently cooked for the table during Winter.

King Philip Corn (2).—This variety grows small but rapidly, maturing in 85 to 95 days under favorable circumstances. It is admirably adapted for short seasons, and for late planting, as, for example, when the larger varieties have been killed out from any cause. Cultivate like other varieties, only that the hills may be considerably nearer together, as the stalks are small and low, and do not shade the ground so much as the larger kinds. It ears well, and by closer planting will produce as much per acre as most of the other kinds—and even more of sound, *heavy* corn than many others.

Stowell's Sweet Corn (3).—Plant at the ordinary distance of field corn, and quite as early. It is a slow grower and ripens late. In addition to its good quality, and large ears and kernels, it is so slow in maturing as to give a fine succession of excellent green corn, and it has been erroneously called "Evergreen Corn." Owing to its hybridization with other varieties, and late ripening, it is often difficult to secure a supply of good, pure seed, in Northern localities. If planted by itself on a warm soil, the seed will mature well.

White Poland Oats (4).—This differs mainly from other varieties in its large kernel and great weight (38 to 42 pounds to the bushel). Sow in good soil as early as the ground will admit. If it is desired to make the most of the seed, put in drills, 8 or 10 inches asunder, the seeds 2 or 3 inches apart, and hoe once or twice.

Chinese Sugar Cane (5).—By all we can gather from last years' experience, we would say that this is very like Indian corn as respects soil, manuring and cultivating; but plant as soon as the soil is dry and warm; cover very lightly. We prefer drills, running north and south, 3½ to 4 feet apart, the seeds pretty thick, to be thinned out to 6 or 8 inches when well started. On a large scale it is perhaps better to put in hills, like corn, to admit of plowing or cultivating both ways. It comes up like grass or oats, and grows slowly at first, but pushes ahead rapidly in July and August. To be sure of ripening seed north of 40° it is well to start a quantity of seed in a box, and transplant when the weather and soil will admit. A convenient mode for this and other plants is described under the head of "How to Start Early Plants."

Ashcroft's Sweedish Turnips (6).

River's Sweedish Stubble Turnip (7).—Both of these are late varieties and may be sown as late as July, or nearly a month later than the common ruta-bagas. They may follow very early potatoes, cabbages or peas. We should advise planting generally after the middle of June. See notes of our experiments with them, on page 292, vol. XVI.

Notes on Illinois Farming....III

To the Editor of the American Agriculturist.

In speaking of Western farming, allusion has been had in general terms to the mode of opening a prairie farm, and in my second communication to fences. My next letter, as yet unpublished, [not received, Ed.] gave a short account of houses. Outbuildings need but a small space as they are in vogue with old "sucker" farmers, or but to small extent. A hastily constructed log stable, with a door about four feet high, rendering the animals' ingress and egress a very dangerous affair, open all around between the logs, half full of manure, and illy provided with racks or feeding boxes, is, in a majority of cases, all the outbuildings for animals, or rather horses, that can be found. Oxen, cows, calves, and sheep, also hogs, generally shelter themselves where they can, under the lee side of hay or straw stacks. Where an immigration of Yankees, Pennsylvanians, or Eastern farmers is found, better provision for sheltering stock is made. In many portions of the State, however, some steps are being taken towards improvement in outbuildings, &c. The Agricultural papers are doing much towards regenerating the the old habits of carelessness and and inattention to the wants and comforts of domestic animals; but great room for improvement still exists.

I will merely mention roads, and say that they are never attended to when it can be avoided, and good roads are scarce. The prairies when dry, make good roads without attention, and when wet, *very* bad ones. The story of the man who did not cover his house in wet weather because he could not work in the rain, and in dry weather, because it did not need it, applies here. Nothing, in my opinion, evinces a better mark of a flourishing agricultural community, than good roads, and fences.

The great staples of Illinois are wheat, corn, hogs and cattle.

Illinois raises enough grain to feed the United States, but is not very well paid for raising it. Wheat is raised on new land broken in May and June, and upon old land. The sod crop of this grain is generally considered the best, yielding from 20 to 30 bushels, sometimes more. I presume the average yield of Winter wheat in this State to be 15 bushels. If proper attention were paid to the culture of wheat, it would, in my in my opinion, yield much larger crops.

Spring wheat usually does well, and there has been some crops of 40 bushels to the acre, in this country the past season. Wheat is sown in such a careless manner, as a general thing, that the wonder is how any crop is made to pay. Some reap more cheat than wheat, and you can find thousands of sucker farmers who will positively assert that wheat turns to cheat. What a pity they can so *cheat* themselves. More grain is sown broadcast than by drill, but in five years it will be otherwise.

In connection with this subject I would remark that drills are sold too high to come into immediate general use, and this is a fault with almost every new and usefnl agricultural machine. Broadcast wheat is covered with the harrow or plow, as the owner may fancy; that sowed among standing corn being put in by the cultivator or with double shovel plows.

Pennock's drill seems to be the one most generally liked, though various others are used; my own crop was put in by one of Pennock's seven tired drills, which I like much, but can add an improvement to prevent clogging by rubbish. To use the drills effectually, stubble, weeds, &c., must be buried out of sight; this is not in accordance with Western farming, a few inches being deemed sufficient. Broadcast wheat this year looks as well as drilled wheat, so far; what Winter may do yet in his dying struggles remains to be seen, *and feared*. When I harvest my crop you shall have an account of it. It is my intention to roll my wheat in the Spring when the frost has gone. Wheat is generally cut by machines and thrashed by machines. Of this we must wait until another leisure moment gives time to write.

H. H.

Prairie Cottage, Christian Co.,
Ill., Feb. 9th., 1858.

Notes on Farming in S. E. Tennessee.

We recently received a visit from a subscriber in Marion Co., Tenn., Mr. A. Newberry, from whom we gleaned some interesting statements respecting a section of the county little known. Mr. N. came from England about eight years since, and three years ago purchased a tract of land in Marion County of 1,500 acres, paying therefor only *twelve hundred* dollars, though almost 50 acres were cleared up, and a thrifty orchard of 150 apple trees was planted—the majority of them the Limber Twig variety, which flourishes well there, and is much esteemed as a market fruit on account of its excellent keeping qualities. Marion County lies on the north side of the Tennessee river, in a valley between two spurs of the Cumberland mountains. Mr. N's farm lies on the top of "Walden's Ridge," from 2000 to 3000 feet above the bed of the Tennessee river, from which he is some nine miles distant. This elevated position gives a climate, in many respects, like that of New-York, though less cold in Winter, and less warm in Summer. A blanket covering is always needed in Summer nights, while sheep graze in the fields nearly all the Winter.

Throughout this section the hills or mountain spurs are not sharp and rugged, but so gently undulating as to furnish tillable fields upon their sides. The original trees are of tall growth, somewhat scattered, without much under-brush, except near beds of streams where there is an undergrowth of huckle-berries, "sour wood," (*nysser*?) black gum, &c. The soil ranges from sandy to rich sandy loam, with frequent clay sub-soils.

In the more open woodlands, the trees are often deadened by girdling, the soil "scratched" over with a bull-tongue plow, and corn or turnips planted from which a good crop is produced the first season. A wood lot of ten acres girdled in the Winter and planted with corn in the Spring, gave 300 bushels of shell corn.

Through the *Agriculturist s* Annual Distribution he received last year, some of Stowell & Darling's sweet corn, both of which grew very finely, and gave great satisfaction. *The Darling variety furnished corn for the table in eight weeks from planting*, and every stalk produced three well developed ears. This, with Stowell's, he thinks, will give them everything that could be desired in sweet corn, both for quality and a succession.

Mr. Newburry brought from England the attatchment to root culture there prevalent, and he finds turnips one of the best paying crops in his new location. He adopts the English method of leaving the roots in the ground to be fed off by sheep during Winter, which is a feasible mode in the milder climate of Tennessee. Potatoes grow particularly fine on these new lands, made rich by the deposits of leaf mold for centuries past. Last Summer he took out thirty barrels of seed potatoes from New-York, including Junes, Mercers, and Western Red, all of which did well, but he prefers the "Western Reds" on account of their later ripening, and therefor better adaptation to keeping.

Grasses of various kinds grow well, especially Timothy, Herds-grass, and the "Amsterdam blue-grass" which takes well on poor soil. The abundance of natural grasses makes this region well adapted to stock-raising. Several young men have gone there with from $1000 to $2000, which they have invested in live stock to be grazed for Southern markets, to which there is now easy access by the railroads, and have greatly bettered themselves by so doing.

We are somewhat surprised at the statements of Mr. Newberry, that even with the present market facilities, there is a large amount of land of fair quality which can still be purchased at prices ranging from 75 cents to $2 per acre. The great present want is good society. The scattered original settlers need an infusion of civilization. A colony of enterprising men with their families settling at any point in those regions would not only find farming profitable, but exert a benign influence upon a large circle around.

Reapers and Mowers, &c.....III.

FIELD TRIAL OF IMPLEMENTS BY THE UNITED STATES AGRICULTURAL SOCIETY, JULY, 1857

To the Editor of the American Agriculturist.

Since my last, I have read the articles in the *Rural New-Yorker* by Mr. Soper, showing the great injustice done to the Ketchum Machine in the Report of the Syracuse Trial; I have also seen Mr. Burrall's and Mr. Allen's respective Protests in regard to their machines. Such blunders—such errors—such omissions—such reasoning and such injustice do these gentlemen point out as abounding on nearly every page of the Syracuse Harvester Trial Report as to even surprize me, familiar as I supposed myself with the subject; and yet I presume there are several others among those who competed, that, if disposed, might add largely to this catalogue of delinquences, if they have not concluded, by this time, that the whole thing is pretty essentially *used up*. For my own part I can only say, in farmer parlance, that these gentlemen, in their severe though just protests, have cut me completely out of my *swarth*, and left little more to say. Trials of this kind hereafter will be a *by-word* and *reproach;* and the medals which the Society have awarded *can only be exhibited by their winners with disgrace.* Had I been so *unfortunate* as to have obtained one, the very first thing I should do would be to *melt* it down and then dispose of it as so much gross *bullion.*

But, to give the public an idea of the injustice these gentlemen complain of, I will quote one or two of the charges from each. Mr. Burrall states, among many other things:

"I entered two machines of entirely different construction. One as a Reaper only, for which I paid an entrance fee of $50. This machine had previously, at the New-York State Trial at Geneva, in 1852, been thoroughly tested in competition with McCormick's, Manny s, Seymour & Morgan's, Atkins' and others, and received the first premium, and has often since competed successfully with those and various others. It was on the ground from the beginning to the end of the trial, and until I was informed by Mr. Holmes that nothing further was required of it. The Committee were furnished, at their request, with a printed description of it, setting forth its distinctive features and claims o merit. It was examined, weighed and priced; was worked in three several fields, its draft tested on stubble and at work, and yet not a word in reference to all this appears in your book. [Meaning the Report of the Syracuse Trial,] I felt this omission deeply, inasmuch as from its former successes, and established claim to excellence, I deemed its

character a 'fixed fact.' I was prepared for a fair trial, but not to be thus silently but forcibly thrown aside."

What Mr. B. adds in regard to the favoritism shown the "Kirby" and "Wood Manny" machines is doubtless correct. The latter won the Second Prize by mere trick and favoritism; while the "Ball, Aultman & Co." machine won the First Prize through the *ignorance of practical and theoretical mechanics* of the Judges.

Mr. B. proposes that the United States Agricultural Society should return him his entrance fee of $50 for his unnoticed Reaper, or grant him a new trial. As to the first proposition I can assure him he will never see the first red cent of his money again; and as for the second, they would probably do him a greater injustice than before, which would only be adding *insult* to *injury*.

I learn that Mr. Allen entered a combined Mowing and Reaping Machine, for which he paid an entrance fee of $50. It worked on the first day's trial, but on the second day it was overlooked by the Judges and not called, although it drew its lot and was waiting all day in the field with its team and driver. Mr. Burrall will see from this that he does not stand alone in forgetfulness; for I do not find any notice in the Report of Mr. Allen's combined machine. I presume the entrance fee is kept all the same, however, as if it were ever so elaborately reported.

H. L.

Syracuse, N. Y., March 17, 1859.

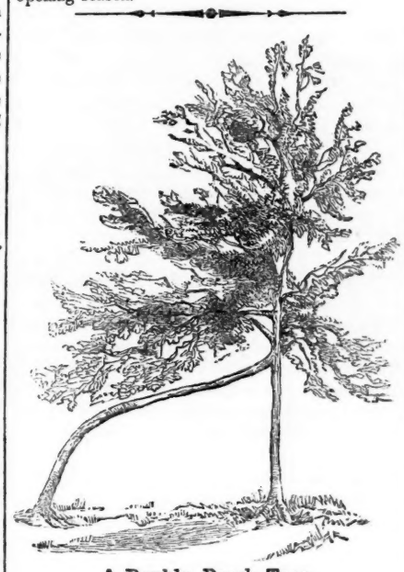
[Owing to the crowded state of our columns by the unusually large amount of advertisements of this season, we were obliged to divide the letter of H. L., leaving the larger portion of it over for future publication.—Ed.]

Meadow, or Mowing Lands.

Now that Mowing Machines are so rapidly coming into use, those farmers who work them are compelled to bring their meadows in a better *surface* condition than when the scythe only was used; as, on a *good bottom* depends greatly the success, or the want of it, of the machine. Some mowing lands are frosty, as it is termed; that is, a heaving up, by the winter frost, of the spongy soil which overlies the hard pan beneath; and when the frost is wholly out of the ground, it settles unevenly, or hummocky, and requires the aid of a heavy roller to crush it back to an equal surface. Other lands have more or less small surface stone which are thrown upwards by the frost, and when the ground settles they remain there in the way of either scythe or machine. Others, again, have been top-dressed during the previous autumn, and the coarser parts of the manure lie loose on the surface, and will not sufficiently decompose before the hay harvest. All these require the roller, as soon as the frost leaves the ground in the Spring, and a heavy roller, too, to bring all the hummocky turfs, and small stones, down to an even surface.

The meadows should be gone thoroughly over, too, to cut and take out all rooty grubs or bushes that may have sprung up since the last haying. Where roots are left in the ground, they frequently send up thrifty shoots late in the season, which, if left uncut, will be sure to break or cripple the machine in passing over them. All these shoots, and the grubs from which they spring, are best taken out by the roots, at once, by the grubbing hoe, or ax.

It is now a good time, also, to examine and see whether any bare spots are in the meadows; and if so, sow them with the proper grass seeds, raking them thoroughly in with a sharp iron-tooth rake; or if the barren spots are large, with a sharp-toothed harrow. Let the meadow be covered with grass in every part; all low places drained off, that the young grass be not drowned, or foul stuff come in, and this should be among the first labors of the opening season.



A Double Beech Tree.

Mr. Editor: I have on my farm, standing in a thick wood, a Beech tree which I think quite a curiosity. Above I give a correct pencil sketch of it. As you will see, it is a tree with two trunks, each upon separate roots. The roots stand about 10 feet apart, and the full hight of the tree is about 20 feet. The strait body is about 3 inches in diameter, and the leaning one, 3½. Can you tell how such a tree was ever produced. It is evident that it must have sprung from two separate nuts or seeds, but the junction is so smooth, regular, and free from knots, that one can hardly believe that they could have been thrust together by accident. Yet I am confident that man had no hand in joining them.

D. L. Adair.

Hawesville, Ky., Feb. 13th., 1858.

Whence comes the Cut Worm?

To the Editor of the American Agriculturist:

I will answer the query of your Connecticut subscriber in the January *Agriculturist* by saying that the Cut Worm comes from an egg laid by an ash colored miller, moth or butterfly, whichever you please to call it. This miller is about an inch in length with wings expanding from one-and-a half to two inches, and legs about five-eights of an inch long. The whole appearance of the insect is much like a magnified musquito without his proboscis.

The eggs are deposited to the amount of six or eight each, in a velvet cone among the grass roots close to the ground, where they are not affected by frosts or wet. The warm breezes of Spring hatch them, and they at once commence their destructive work, rapidly increasing in size. They attain their full size about the end of May and then undergo a change, leaving their worm dress standing perpendicular in the earth with a hole in the top, whence the butterfly has escaped, and is now flying about a harmless insect, except depositing its eggs for a future progeny.

Now, to the direct question why "subscriber's" crop was so injured where the land was plowed the second time. Early plowing turns the eggs down beyond the influence of the sun, and the action of early frosts upon fresh plowed grounds has a tendency to close all openings between the furrows. The harrowing spoken of by your correspondent performed the same office. In this situation many of the eggs were not hatched at all, and others were so late as to do little damage. On the part that was plowed the second time, the eggs were turned up to the influence of light and heat, and a large proportion of them hatched, to the great injury of "subscriber."

Wm. Shinn, Jr.

Sidney, Shelby Co., O.

The Huckleberry.

Yes, *huck*leberries. We have always called them so; and so every body else calls them; although, in the books they are *spelled whort*-leberry. But, never mind the name, every-one knows what they are—the most delicious, palatable, healthful fruit of the season. And in such varieties too, from the little black and blue things, not biger than a garden currant, up to the great, plump, glistening, jet black, and delightfully bloomed blue globules, nearly as large as a common pie-cherry! They were the first wild fruit we ever picked. Sweet-ferns, and huckleberries covered the rocky pastures in the neighborhood of our birth-place, and the woods, hill-sides, and mountain tops were full of them; and the higher the land, the more rocky and worthless it was for any kind of pasturage, the better were the huckleberries. Cultivated, we never yet saw them. Indeed, we doubt whether they can be cultivated to advantage, either in profit or improvement in size or flavor, although we hear of attempts being made. We have had no opportunity for a trial, having no garden land poor enough for them. We are not sure, however, but we may try it, and see how they will work. Were we a young man, and had cash enough, we might buy a mountain, or part of one for the express purpose of growing huckleberries as a source of profit: for we have no doubt there are thousands of acres of land, which, in its natural condition is more profitably adapted to the growth of huckleberries than it could be, with the expense of drainage and taking the stone from its surface added, to any other agricultural purpose.

Poor land—that is to say, thin land—cold, frosty, spongy, heavy, sandy loam, rocky, and cobble stony, bears the best berries we ever saw They come into our city in their season, from the poor hills and plains of Jersey and Long-Island, from up the North-river, along on the mountain sides, and back in the country—all about, in fact—giving employment and revenue to thousands of girls, boys, and poor people who probably give little, or nothing for the privilege of picking them. We should really like to see the huckleberry statistics of New-York, for a single year, as a matter of curiosity, and know what a sum of money is paid out for this innocent luxury to its consumers, and how many people to whom, while picking them, could do little else to earn an honest shilling, they are a source of support and profit.

We would like also to learn from some of the owners of huckleberry lands whether they derive any actual profit from the fruit itself, other than what is incidental to the gathering and marketing of the fruit. That is, whether they can sell the crops on the land to the pickers, and what it is worth per acre. When New-York gets to be as populous as London, the consumption of huckleberries will be enormous, compared to what it is now, even, and it may be that on hill, and mountain, and plain, lands yielding them may be like the Highlands of Scotland, now annually let out in districts for deer-stalking, grouse-shooting, and other items of country sports, may be better set apart for huckleberry growing than anything else.

We know wide patches of land which give a more profitable annual yield in blackberries and elderberries, than for any cultivated family crops, and can readily believe that large tracts, almost worthless for any other purpose, may be profitably devoted to huckleberries.

Agricultural Humbug at Washington..III.

WHAT IS TO BE DONE.

That something should be done to bring our Government Department of Agriculture into a respectable position, or abolish it altogether, seems to be the opinion of a large majority of the intelligent farmers of the country. Since starting the subject afresh, in our February number, we have continued to hear responses from all parts of the country.

At the last meeting of the Massachusetts Horticultural Society—a full one—the subject was freely discussed, and as the sense of that society, a committee of five was appointed to memorialize Congress to stop the abuses in the Agricultural Department of the Patent Office, especially the importation of old, worthless trash in the shape of seeds, disseminated all over the country as varieties of the most approved descriptions.

The same subject will come before the next meeting of the Pennsylvania Horticultural Society.

Various propositions have been offered. Several intelligent gentlemen suggest that the most effectual and immediate remedy is to petition Congress to entirely withhold the Agricultural Appropriation. In this we should heartily concur, did we despair of improvement in the present mode of conducting the agricultural operations of the Patent Office, for we are well convinced, as are the mass of farmers, that the $75,000 appropriated professedly to benefit agriculture is worse than wasted. It is a sugar plum held out to "pacify" farmers and keep them from rising up in their might to demand that the leading industrial pursuit of our country should receive a degree of attention commensurate with its importance. The pittance (of only one dollar in every thousand expended by our Government) devoted to fostering and improving that occupation upon which the prosperity of our country mainly depends, is bad enough, but when that small sum is misapplied, in part to the employment of ignorant, inefficient clerks and payment of their pleasure tours to Europe, and in part to buying up old, impure and worthless seeds—cast off by European dealers and of no account here, except to lumber up the mails and occupy the time of farmers in experiments, all through a season, to find out that they have been gulled—we say, when this is the case, it is high time the whole thing was wiped out, to make way far something better, if no change can be effected in the present mode of operations.

Potatoes—What made them Rot?

Here is one example like thousands of others. Last Spring a friend of ours planted on his farm at Flatbush, L. I., six varieties of potatoes, all the same day, on the same soil, and manured and treated every way alike. The varieties were Mercers, Carters, Pinkeyes, Dykemans, a new variety from Claverack, N. Y., and another from Ireland. Of these, the Mercers, Pinkeyes and Dykemans all rotted, while the other three were not affected. The experiment was on a large scale, and the seed of some varieties was obtained from several distinct localities. Now what made these three varieties alone rot. In other similar experiments the rot has been found in the varieties not affected in this instance.

We are constantly asked how we explain the "potato rot." *Ans.*—We can not explain it at all.

An animal in high order in December, may be considered as half Wintered

Farm Buildings.

NUMBER II.

Having surmounted necessity, as a beginner on a new farm—"beginning poor and low, and growing great and high," as Parker said of Daniel Webster—we now pass into the second series of dwelling, (see next page) extended from its original, on the same plan of the cottage given in our last number, (page 73) only of larger dimensions, into a respectable and commodious farm house, for a proprietor of one, two, or three hundred acres. The original of this, in its cottage size was 26x18 feet, with a lean-to 14 ft. wide, and an extension, as now shown, of 16 ft. in length on the main part, and on the lean-to, of 20 ft., and an upright hight of 16, instead of 12 ft., with the roof running down over it, at a quarter pitch. The hight of the lower rooms, in the main body, is 9 ft., and of the lean-to rooms, the same; or they may be reduced to 8 ft.; and in case the pitch of the roof will not admit of that high in the rear lean-to posts, the ceiling over head in the rear, can follow the rafters until the proper hight is reached, and then pass on a level to the partition, making a good finish, and sufficiently well looking for the humble purposes to which these rear rooms are used. Or, which, by the way, we would prefer, the house roof may be made one third pitch in front, and a quarter pitch in rear, which will not at all deform it, and give 1½ feet higher elevation to the peak, or ridge of the roof—that is to say: 6 ft. instead of 4½ ft. pitch, as in the cottage heretofore described. All this is a matter of calculation which the builder can readily solve, and adopt.

Here, let it be understood that we design but *one* front to this house, with a principal *end* view, and that the other end, and rear, are the garden, or back yard sides, covered in with trees, and therefore out of sight only to the occupants of the house and farm. The roof, throughout, is a plain one, which we adopt as the very best, absolutely, which can be constructed for the farm house—the only break in it being in that short and narrow part coming over the front of the outer kitchen, or lean-to extension shown in the draft of the elevation. Consequently no leakage by joints or intersertion can be admitted, excepting from bad or negligent work in that one item, and on the rear, which will be readily understood by studying the plan and examining the elevation.

INTERIOR ACCOMMODATION.

(See Ground Plan, next page.)

This will be readily understood. On the front is a verandah 40x8 ft., the whole upright part of the house being 42 ft. long. The entrance hall is 9x6 feet, leading on the left to a commodious parlor 18 ft. square; on the right is a smaller sitting room 18x13 ft. Between these rooms is a chimney with two flues, admitting a stove pipe from each, and as a closet for each one is between. To save room, the chimney is placed nearer to the parlor, and the pipe from the sitting room can pass through a part of its closet. In rear of the parlor is a family bed-room 14x12 ft., adjoining the inner, or Winter kitchen, which is 20x14 ft., having a closet next the parlor of 6x4 ft. Between the sitting room and inner kitchen is the stairway, commencing to lead *up* at the inner end, with a cellar door, and stairs to go *down*, at the outer, or right hand extremity. Next the kitchen, on the right, is a buttery, or provision and dish closet, which, if necessary, can be partitioned into two separate ones, now being 12x10 ft., and lighted on the rear. A passage of 4 ft. wide between this closet and the stairway, leads into an outer, or Summer kitchen 18x14 ft., entered in front from the verandah, which is 19x6 ft. In the *inner* kitchen on the rear, between the windows, is a chimney, with stove flue, fire-place, and oven, if all three of them are wanted; or, this chimney may be dispensed with, which we would prefer, and a main chimney built where the 6x4 closet stands, having a broad, old fashioned fire-place, and oven in it, and connected with the other front room flues above, so as to have but a single chimney stack through the ridge of the roof, as in fig. 4. We do love an ample, open fire place in the farm house kitchen, especially in a wooded country; and if coal be used, we equally like an open fire place, and grate. It is a great, and most genial dispenser of warmth, and comfort, and nothing so much promotes good fellowship in a Winter evening as a cheerful fire-side. The cook-stove may have its place also, and be thrown back between the windows on the rear, so as to be out of the way of all intrusion by the family, other than those who have to use it.

The outer kitchen—marked O. K.—is "a place of all work," Summer, or Winter. It serves as an entry for the every-day use of the house; for cooking in Summer; store house in Winter; and thoroughfare, always.

At the end next to the wood house is a chimney, with arch, and kettle, a pipe flue, or more, a fire-place, if needed, or any other heating use required. Adjoining it, runs off to the rear, a wood house, with half its gable end projecting to the right, forming an open entrance. Immediately in rear of the kitchen is a closet, or Summer buttery for milk, or other purposes, partitioned off from a part of the wood house. This wood house is 16 ft. in width, and may be extended to any depth back required, and may there join into a workshop, carriage-house, or any other building needed, or of which we may hereafter give a plan. Our present object is simply to give that indispensable appendage, the wood-house, in its proper place.

CHAMBER ROOM.

(See next page.)

The chamber plan is simple. A narrow hall leads from the head of the stairway to three chambers in the main, or upright part, and three low closets taken off from the highest part of the lean-to, if needed, or any other heating use required. Adjoining it, runs off to the rear, a wood house, with half its gable end projecting to the right, forming an open entrance. Immediately in rear of the kitchen is a closet, or Summer buttery for milk, or other purposes, partitioned off from a part of the wood house. This wood house is 16 ft. in width, and may be extended to any depth back required, and may there join into a workshop, carriage-house, or any other building needed, or of which we may hereafter give a plan. Our present object is simply to give that indispensable appendage, the wood-house, in its proper place.

This house may be built of wood, and finished in a plain manner, complete, for $1,000, to $1,500, according to the cost of material in the part of the country where it is situated. The larger sum will be ample to do it very well.

GENERAL REMARKS.

We have thrown the broad, or hanging roof over this house, and its appendages, for the same reasons given in the previously described cottage, and would have it project over the walls of the main body 24 to 30 inches, and 18 or 20 inches over the wing, and woodhouse. We have also given it a full front verandah in both house and wing. We believe in verandahs—as much so as in any room inside of the house itself. In the first place, they don't cost much; secondly, they afford shelter, shade, and protection; and thirdly, they are the very pleasantest parts of the dwelling to sit in during the warm season of the year, and enjoy the social intercourse of family, and friends. The good housewife, too, here finds ample space, and protection, to spread her fruits of apple, pear,

Fig 4—AN EXTENDED FARM HOUSE.

peach, cherries, plums, and berries, to dry, and cure them; set an evening tea-table there, even. The family, after being accustomed to a veranda, would not know what to do without it. *We* would not build a house, and call it "complete" without the verandah. It beautifies the house, also, giving it an air of comfort and repose which no other feature can do, and is every way indispensable in making an architectural finish to a country home.

There should be a cellar, at least under the main body of the house. The cellar wall should rise 2 feet above the ground level, with a window of one light deep, and three or four wide, in each end, hung by butts, so as to swing up in Summer, and ventilate and light it always.

If the soil be compact, or not thoroughly dry of itself, a drain should lead from it to keep it so. It is better to lay a cellar wall of stone in good lime mortar; or, hard burnt brick may be substituted; or even a dry wall of stone will answer, if well laid, and pointed inside; let the wall above ground be laid in mortar, always.

Now, here, (with some alterations in the size, or proportions of the inside room, if you prefer,) is an honest, plain, comfortable farm-house, costing little, and capable of holding numberless comforts to any family whose pride does not outrun its ability; and where, if they only choose to think so, they can be more happy than in a pretentious thing which cost five times the money. The columns of the verandah may be covered with roses, or other climbing plants; a beautiful door yard may be planted with shrubbery, flowers and trees; and with the trifling labor which may be spared out of leisure time (given by many people, young and old, to frivolous nonsense,) to the cultivation of these out-door ornaments, the place may look a little paradise! In building your farm structures, pay no attention to the popular fashion of the day. Build to suit your own convenience, and your own means, regardless of other people's eyes, or opinions. Let your home be, in every sense, a home for yourself, and your family; and no fear but all those whose good opinion you care to secure, will appreciate your good sense, and the true taste of your architecture, as well as partake of your in-door hospitality as often as you choose to bestow it.

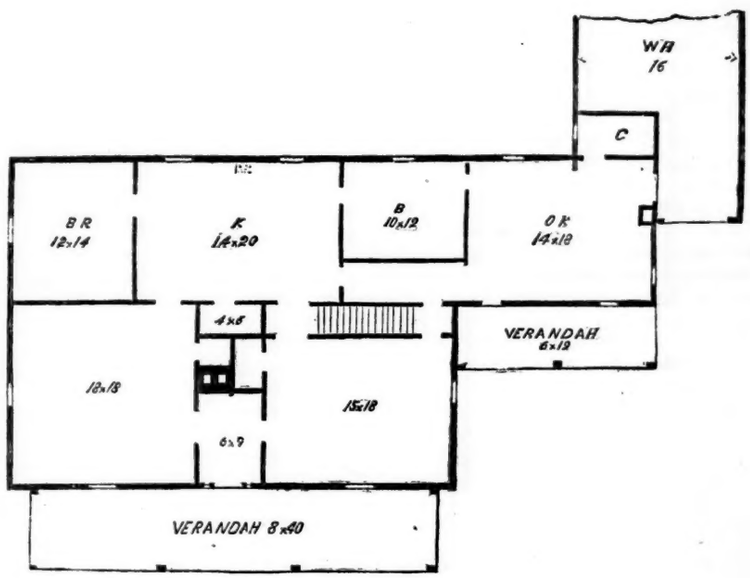


Fig. 5—GROUND PLAN.

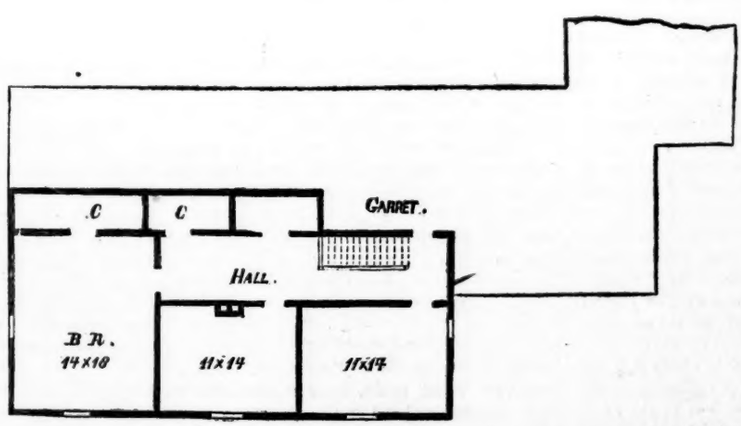


Fig. 6—CHAMBER PLAN.

Cheap Inside Finish for Houses.

To the Editor of the American Agriculturist.

The following is, perhaps, mainly applicable to the cheaper sort of wooden houses made of vertical boards, &c., but will answer also for all others.

Cover the inside of the rooms, &c., with cheap muslin stretched horizontally and well tacked with leather-headed tacks, and then *paper* on the muslin. If well done, this makes a snug and cheap finish, impervious to air, will last a long time, and one great advantage is that any one can put it on—no waiting for the slow notions of others—and the house may be occupied immediately.

I have finished more than one house in this way, and lived in them too, and found them comfortable. *This finish would be just the thing for the cheap buildings described in the Agriculturist for March.* E. F. Zevely.

Cumberland, Maryland.

Blinks from a Lantern.

BY DIOGENES (REDIVIVUS).

I find that my lantern is likely to be in great demand, and that I shall have all the help I want in searching for a farmer. The next day after its light began to shine, I had a call from a man who farmed five hundred acres. He seemed to be greatly astonished that an inquiry had been made for a farmer. They were plenty in his region, and if I would call over, I could see one man at least, that understood his business. He had a very slim opinion of gardens and these seven by nine farms. He liked to do up business on a generous scale. The man talked so fluently, and was so courteous that I immediately lighted my lantern, and went to see

A LARGE FARM.

On my way I pictured to myself a very splendid mansion, large barns, good substantial stone fences, smooth meadows, large herds of cattle, a sty full of sleek porkers, yards full of fowls, and all the surroundings of a man of wealth. I found, instead, a two story dwelling house, that, but for its size, might have been mistaken for a packing box, and all the surroundings of a large owner of real estate, and a very poor cultivator. The barn was built to accommodate about twenty cows, and the pig-sty was simply a rail fence with a hovel in one corner used for three months in a year when the pigs were put up to fatten. He had carts, sleds, waggons, harrows, cultivators, sleighs, carriages, but no particular place for any of them except the carriage. That had a house built for it, and it was usually left there, but it was oftentimes hard crowded with plows, rakes, chains ox-yokes, and with the mowing machine which had just made its advent, and was the special pride of its owner. There was no particular place for anything, and just as we drove up, the colored boy was in a peck of trouble, about the pin to the cart-tongue. That useful article, it seems was made to do double service upon the tongue of the sled, the cart and the ox wagon, and in the change from the sledding to the carting it had been *mislaid*, as the owner said, though I was not able to see how a thing could be mislaid, when there was no particular place assigned to lay it. The cart was under the shed and the oxen yoked, ready to be put on. The sled was under the apple tree, turned up side of the wall, where it had been left in the last snow. The ox cart was at the lower end of the wood pile under the big "Ellum tree," as they loved to call a gigantic elm, that was a real glory to the place, but which the owner did not seem to value much.

"What's the oxen stannin here for all the morning Jo ?"

"Can't find the cart pin Massa ?"

"Where have you looked for't ?"

"I'se looked for him ebbery where Massa, in de sled, in de cart, in de carriage house, and in de corn crib. I'se looked for him all de morning, and no find him. Guy, Massa, make me tink, for all de world, of de song Aunt Sally sing so much."

"Goosey Goosey Gander
Where do you Wander."

"I recken he's lost."

"Lost! you blockhead, I saw you crackin nuts with it, last week in the horse stable."

"Whew, Massa, nebber thought of dat. Dis child rek'lects."

Jo stirred himself, diligently, upon this refreshing of his memory, and the lost pin was found, where it was last used, on top of a pile of walnut shells. The team was put upon the cart-tongue, and Jo went off to his work at ten o'clock in the morning.

This little incident, very unimportant in itself, shed a flood of light upon the management of this farm. It had no efficient head, indeed I could see by the hang of Jo, and the other hired men, that I fell in with, that the owner did not exactly know, whether he was the head of the establishment, or Jo, or big Mike, who had lived several years upon the farm, and knew all about the business, unless he was mistaken. It required no lantern to see, that things went easy with the hands, and that nobody felt conscience stricken, if he was not in the field by seven in the morning. The need of a ten hour system was not felt here, for the relief of oppressed labor.

This five hundred acre farm was inherited, and the owner had been five years in possession. He also inherited some thousands of dollars in bank stock, and had sufficient capital to make every acre of it pay him handsome dividends. It was naturally good land, and with a judicious expenditure of money and labor, it could be made a handsome fortune. I looked over the farm, lantern in hand, and found as stock, four horses, six oxen, thirty cows, and a few young cattle, and sheep. There were a hundred acres in mowing, fifty in grain and potatoes, fifty in woodland, and three hundred in pasture. The meadows cut but a trifle over a ton of hay to the acre, and the yield of corn was rarely more than thirty five bushels to the acre. The root crops were not cultivated with the exception of a few potatoes, and turnips for the table. The labor employed was in keeping with the crops. The owner himself did not work much in the field, and had no competent overseer to manage the help. It was left pretty much to the inspiration of Jo, and the wisdom of big Mike, who staid through the whole year, while the other five hands only worked through the Summer and Fall. I endeavored to show the light of the lantern upon

THE BAD ARITHMETIC

of the owner. His present number of stock, and much more could be supported in good condition upon two hundred and fifty acres. One half of his farm, at least, was lying idle. It was like his cart pin when Jo could not find it, of no use to any body. He did not use it, or get any returns from it, because a few cattle roamed over it and grazed the scanty herbage. If the whole farm was worth ten thousand dollars, there were five thousand dollars of dead capital, for which he received no returns. On the contrary, he had to pay taxes on it just as heavy as upon the part of the farm that he used. It was actually a bill of expense to him. But he could not understand this, at first, because he was very sanguine in the belief, that he did use the whole surface of his farm. But I showed him, that there were two ways, at least, of dividing a farm, perpendicularly, and horizontally. A farm has depth, as well as area, and he who only uses the first four inches of the upper crust of his farm as really loses the other half, below, as if he cut off one half of its superficies. This was a new sum in Arithmetic to him, and he confessed himself convinced.

A PEEP AT THE BANK STOCK.

This large farmer, as he loved to call himself, had his five thousand dollars in bank-stock, paying him, on an average seven per cent. His farming capital, as he managed it, did not pay him three per cent. Yet his neighbor, with only a hundred acres of land, not a whit better, makes his farming capital pay him ten per cent. He has no bank stock, but always keeps a few hundreds in the bank on deposit, ready to make a good bargain, when he wants to buy stock, or anything else cheap for cash. He says he can manage his own capital better than any body else can for him. He plows deep, manures high, drains, and sees to his business in person. He uses as much labor as the man with five hundred acres, and actually cuts more grass, and gets more grain, using it all upon the farm, and sometimes buying. There is nothing to hinder the large landholder from applying all his capital to his business, and getting like returns for its use. The present account of his capital stands thus; $5,000 in the surface of his farm, half used, three per cent; $5,000 in the unused subsoil, minus one per cent for taxes and other draw-backs; $5,000 in bank stock, seven per cent. The new account which he will open, when he opens his eyes wide enough, will stand thus; 15,000 dollars all invested in his business, and paying ten per cent, with no failure of dividends, by reason of defaulting cashiers, and presidents. Diogenes knows of men, who get twelve per cent for their farming capital, wholly employed in the legitimate business of tilling the soil, and selling its animal and vegetable products, and is still in doubt whether they come up to the true standard of farming.

As to this large farm, which is the type of at least one half the farming in the older States, it vanishes under the light of the lantern. It is no farm at all, but a half cultivated waste; an ingenious contrivance to cheat men of fair dividends. Shall I ever find a farmer?

Dioscorea at a Discount....Free!

The following letter speaks for itself. "The Chinese Potato" don't seem to be valued at "$10 per dozen" in Illinois, or else our old subscriber, Mr. Squires, exhibits a liberal public spirit not common among us more Eastern men.—Ed.

To the Editor of the American Agriculturist.

I have cultivated the Dioscorea for two years, and I now offer my entire stock (with the exception of 100 seed tubers) amounting to 500 large roots, and as many seed tubers, free, to any of your subscribers or others who will be to the expense of getting them, or any part of them. The large roots are from 1 to 2½ feet long, and from ½ to 1½ inches in diameter.

Geo. L. Squires, Galesburg, Knox Co., Ill.

Fig. 13—DRONE (magnified.)

Fig. 14—QUEEN (magnified.)

Fig. 15—WORKER (magnified.)

Wonders of the Bee-Hive.

NUMBER X.

We have already spoken of the three different orders into which a family of bees is divided, and have given "portraits of the size of life," of a drone, a mother-bee, and a worker. We now reproduce these individuals on a scale considerably magnified which brings their peculiarities more distinctly to view, and makes the contrast the more marked. What we have to say, however, in this present paper has to do chiefly with the queen or mother-bee.

Among the wonders of the bee-hive not yet enumerated is the method of supplying the place of the queen in case of her accidental loss, or her departure with a swarm. There is no necessity for having more than one perfect queen in a hive at any time, but yet, as no stock can long flourish without one, it is an interesting inquiry how her place is to be made good. The absence of a queen from the hive even for a short time causes a great commotion, and if she were taken away from the bees when they were without the requisite means for procuring a substitute, they would give way to despair, and would soon run out. If on the other hand after her loss they have good reason to believe that her place will be filled, their excitement subsides, and they pursue their labors as cheerfully as if she were actually present. So that, although she exercises no authority and makes no laws, or judicial decisions, the prosperity of the hive depends upon her presence. It is often true in kingdoms that persons are called kings and queens, who are so restrained by ministers of state, as to have hardly any more real authority than the queen-bee, and such monarchs are less free to come and go, and do what they have a mind to, than their own subjects.

By referring to page 41, in the February number of the *Agriculturist*, our readers will see in Fig. 9, the form and size of the royal cells, and in Fig. 8, *a*, *b* and *n*, show how they are connected with other parts of the comb. It is still an open question whether the queen ever lays an egg in a cell where preparations have been already begun for royalty. No one supposes that she ever lays one in a royal cell that has once been used, or in one which has been carried anywhere near to completion. Some have thought that instinct led her to make some provision for a successor, and to lay a number of eggs of the right kind in cells particularly adapted to the purpose. Others suppose that this depends entirely upon the instinct of the workers, and that they have the knack of so nursing the young worms as to produce any number of queens that may be necessary to guard against accidental loss.

We have reason to believe that the ordinary worker is but an imperfectly developed mother-bee, which on account of the limited quarters in which it was born, the coarser food given it, and the general management of things, has failed to become what it might have been under another system of management. Strange as this statement may seem to some, it is well supported by careful experiment and observation, and even by microscopic investigations. And it is a fact settled beyond all controversy that from ordinary brood comb and the eggs laid in common cells, the workers can produce perfect queens in about two weeks after the loss of the mother-bee is discovered. We have found the interval to vary from twelve days and a half to seventeen. It would seem then, that whenever the workers realize the necessity of making this provision, they adopt the method of nursing which is adapted to the full development of the powers and instincts of the perfect female bee.

If this is undertaken while the workers have a healthy, productive queen, and when the population promises to be overcrowded before long, these acorn-like cells may be found on the edges of the sheet of comb, as represented at *a* and *b*, in Fig. 8. But when the queen is lost, the outer cells containing neither brood nor eggs, a cell must be taken nearer the middle. The cells are represented as pendent generally, a position that Mr. Langstroth supposes to be chosen as a mere matter of convenience and economy of room, since he has cut them out and laid them horizontally without interfering with the growth of the larvæ.

In the observing hive, the gradual progress of the work is easily noted. First is seen the enlargement of a cell containing an egg, or a very young worm, at the expense of the cells immediately surrounding it; then it grows rapidly for several days, bending downwards by degrees, and being incessantly visited by the worker bees who bring the "royal jelly" to the occupant, and seem to feel great responsibility concerning it. After it has been sealed over they continue to work upon its outside walls. When the emergency arises that requires such preparations as this, the bees usually take the precaution to start several royal cells, that if one fails they may fall back on another. Sometimes they do not carry all to completion, but destroy the worm and use the cell for honey.

If these arrangements are carried out while the stock have a mother-bee in vigorous condition, and the hive is densely populated, it is supposed that the new queens are kept within their cells until she has taken her departure with a colony and left her place vacant for her successor. Sometimes, also, a new hatched queen finds that she has younger sisters ready to come out from their cells and take her place; and then it becomes a question for the bees to settle, whether she shall be allowed to attack them in their cradles or fight a duel with them, or shall be compelled to leave the hive herself in search of other quarters.

A case is described in Jardine's Entomology, where a young queen was matured while the old one still remained in the hive, but her enjoyment of life and liberty was very short. "She was instantly surrounded by a mass of bees, who hemmed her in so closely that but a small part of her body was visible. She made many painful and unavailing struggles to escape, and emitted every minute a plaintive sound. All the while the reigning queen occupied herself in laying eggs, often within an inch or two of the prisoner, going about her avocations with as much of unconcern as if she knew her subjects would of themselves soon effectually rid her of her puny rival. In two hours from her birth, accordingly, the body of the young queen dropped lifeless from the dense mass of her inexorable guards." This description may be compared with the account given on page 249 of the last volume, showing the reception given to a strange queen when introduced into a hive already supplied with one of her peers.

The queen thus nurtured, on escaping from her cradle, is very different from the insects matured in the adjacent cells, not only in shape and appearance, but also in instincts, and habits. As a queen she will probably never leave the hive except to meet the drones, unless she goes with a large colony to establish a new home. As a worker, she would go out every pleasant day for honey, or busy herself with wax-making and care of the brood, for which as a queen she has no concern. The worker is short lived and is not likely to survive for a twelvemonth. The mother-bee continues from three to four years. The queen engages in a fight with another queen, and never is known to use her sting except against a royal rival. If held in the hand she will bite but not sting. The common worker however defends itself with its sting against ordinary enemies, but bites a strange queen or suffocates her. The difference of form in the two is illustrated by our engravings. The ability of the worker-bees to rear a queen in this manner is one of the most remarkable facts in natural history, and the knowledge of it is of no little importance in bee-culture.

Fig. 16. MOTHER-BEE, (natural size.)

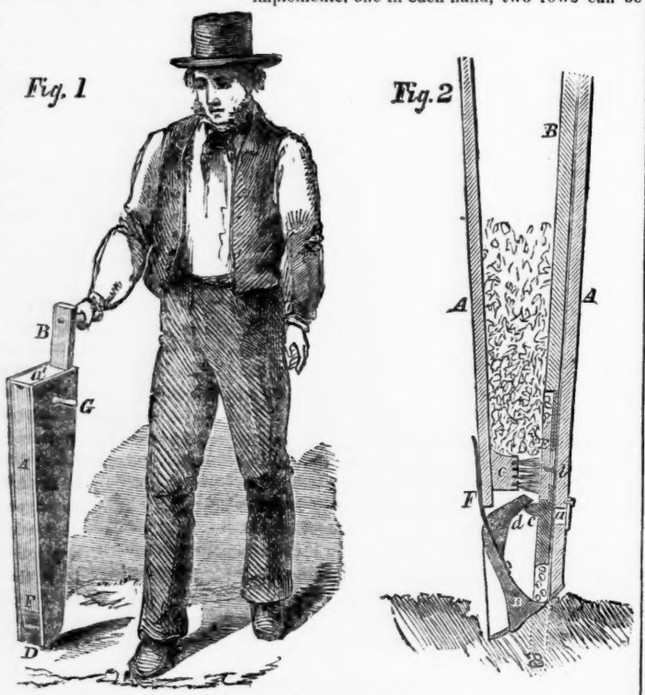
Occasional instances have been known where worker bees, (perhaps those matured in the immediate vicinity of queen cells,) have proved to be fertile and have laid eggs, but only drone eggs; and students of natural history are now discussing the fact announced first by Dzierzon and confirmed by Von Liebold in Germany, as well as by Langstroth and Prof. Leidy, in this country, that the unimpregnated queen-bee is capable of laying drone eggs. This is a curious fact, though similar to what has been noticed in the *aphides*, or green lice, and is called *Parthenogenesis*.

Mr. Langstroth describes an unsuccessful attempt of some bees, which had no worker eggs, to rear a queen from drone eggs. "Two of the royal cells were, in a short time, discontinued and were found to be empty, while a third contained a worm which was sealed over the usual way, to undergo its changes to a perfect queen," On

opening this cell, however, it was found to contain instead of a queen, only a *dead drone!* "At the base of this cell was an unusual quantity of the peculiar jelly or paste which is fed to the young that are to be developed as queens. One might almost imagine that the poor bees in their desperation had dosed the unfortunate drone to death; as though they expected by such liberal feeding, to produce some hopeful change in his sexual organization."

Planting Corn with Machines.

We have examined most of the Corn Planters that have been brought forward, but thus far we have commended no one of them, for the reasons that there seemed to be radical imperfections in their construction. The main defects have been in their not dropping the corn uniformly, and especially in not covering it evenly. We still think that for so much ground as we could plant with our own hands we would prefer the old fashioned mode of "marking out," dropping by hand, and covering with a hoe. And we would say the same of planting even the largest surfaces, provided, always, that we could secure enough of just the right kind of help at just the time the ground was in the best condition for planting. This is, however, very often impracticable, so that on the whole we think there are several patent planters which will do the work better in unskillful hands than to trust it to the judgment or caprice of the ordinary run of hired men. The kernels should be dropped in the hill considerably separated, and all be covered at a uniform depth with finely pulverized soil. But very few hired laborers will do this, even though working side by side with their employer. In perhaps a majority of corn-fields, there is a loss of ten per *cent*, that is, one kernel in every ten comes up late from deep planting, or does not come at all from the same cause, or for want of covering.



Boeklen & Bossert's Corn Planter.

In regard to the best Planting Machine, we are inclined to consider that, for a hand implement, the one here shown, is the cheapest, and all things considered, the best we have seen. (The retail price is $3 50). Its chief superiority over those previously proposed is in the arrangement for covering the seed. We tried this one in a mass of *wet* sand, so compact that it required considerable effort to thrust even a walking stick into it, and yet in each trial we found the corn well covered and always 4 or 5 kernels in a hill. An examination of the accompanying figures will illustrate its mode of operation.

Fig. 1 shows the operator at work. Fig. 2 is a section of the inside apparatus. In the upright piece *B*, there is a groove at *E*, which can be made larger or smaller at pleasure. As *B*, is pushed downward by the hand, the stiff brush *C*, scrapes off the surplus kernels and say 4 or 5 kernels drop into the space *d c*. At the same time the lower end of *B*, which is hollowed out, catches the charge of seed previously dropped, and pushing aside the hinged shoe *D*, deposits the corn in the soil. As *B*, is drawn up, this shoe, *D*, is thrown back to its place by the spring *F*, and in returning it draws the soil over the corn. The operator, then simply sets down the implement where a hill is wanted, pushes down *B*, and withdraws it, and goes to the next hill. By taking two implements, one in each hand, two rows can be planted at the same time. When two are used it would be well to nail a lath or small strip of wood in front of them, to keep them always at the same distance apart, say 3 or 4½ feet, according to the width of rows desired.

Practical Hints on Raising Onions.

[The following article is very acceptable and valuable, as it is from one who speaks from large experience.—Ed.]

To the Editor of the American Agriculturist:

I know of no crop which requires the cultivator to be more persevering and to attend to his duties more punctually than that of Onions. From the time the seed is in the ground until they are in the market, there is no period when they can be left without receiving his attention. If this be given, perhaps there is no crop which pays better for the labor than this. Many of your readers may not be aware of the quantities sent to our markets. As one item on this account, I will say that the towns of Southport and Westport, Fairfield Co., Conn., sold last year one hundred and fifty thousand bushels or more.

The soil best suited for the onion is a clay loam; if gravelly they will dry up before they mature, and if too wet they can not be sown early enough in the Spring. The longer the ground has been under cultivation the better, as they will not bottom on a new soil or where it is very light or sandy. Many put the manure on the ground in Autumn and plow it in, then harrow down in the Spring without re-plowing. The manure should be stacked and turned over once or twice and well heated in order to have it fine and free from weeds. Long manure, besides being in the way during cultivation, is apt to make the ground too light.

Most people prefer Fall plowing, as the soil is apt to be lumpy if plowed in the Spring, and will not be fit for sowing as early as if previously plowed. If Fall plowed, it should be well harrowed with an iron tooth harrow in the Spring, followed by the bush harrow until made as level as possible. I have found the best mode of making a bush-harrow for this purpose is to take a plank eight feet long, eight inches wide, and two thick, bore holes in it and put in fine brush. Then fasten the chain so it will draw from the top, and it will keep a ridge of dirt in front of it which will fill all holes and leave the ground nearly smooth. It should then be raked over by the hand rake—I think a wooden one is the best—and all small stones removed.

A machine costing about three dollars, and drawn by hand, makes two drills at a time, one foot apart, and drops the seed at the rate of about four pounds to the acre. This is covered by shoving a hoe, or drawing a rake lengthwise the drills. The time for sowing is as soon as the ground is dry enough, which, with us, is from the first to the middle of April.

As soon as they are up enough to see the rows in the morning—they can be seen at that time much sooner than at any other—they should be gone through carefully with a hoe about eight inches wide and only one and a half deep. A hoe like this lets the dirt slide over it, leaves the ground level, and is light to handle. As soon as the weeds which are cut up by the hoe are dead, the weeder should crawl over each row using a hoe about two inches wide and three-fourths of an inch deep with a handle about eight inches long, cutting up what he can draw with the hoe and pulling the remainder. For this part of the work trusty boys are better than men. About this time a coat of patience and perseverance is generally necessary to insure a good crop. From this time they should be kept perfectly clear from weeds, for if they once get over-run your crop is ruined. They generally require to be gone over four times. When the tops are nearly dead, which is generally in August, they are fit to pull. If they do well, the tops will fall down before they dry up. As the onions are pulled the weeds should be all hoed up and raked into piles, to prevent them from going to seed. Leave the onions spread on the ground a few days. Some people pile them up, putting three or four bushels in each heap and let them stand in this way for two or three weeks. This gives them time to sweat before housing them. They should never be put in when damp as they will grow more and more so, turn black and rot. The best place to keep them until cold weather, is under cover where they will have plenty of air and can be kept perfectly dry. They should never be more than three feet thick on the floor. If required to be kept through the Winter, they should be put in a tight place and well covered to keep the air from them. Moderate freezing will not spoil them if allowed to remain covered and unmoved until they thaw. A common cellar is generally too warm and damp to keep them well. If the roots begin to start they should be moved and dried. From four to six hundred bushels per acre is a common crop. The best time to sell is when they bring a high price. An average price for the last ten years has been about fifty cents a bushel.

David H. Sherwood.

Southport, Ct., March, 1858.

Root Crops for Stock.—The other Side.

To the Editor of the American Agriculturist.

There has been a great deal of *theory* expressed in our country about the profit of roots for stock feeding, together with some little *practice;* and thus far, the theorists have had the best of it; that is to say, they proved by *Englishmen*, that the turnip culture is indispensable for stock feeding "at home;" and thus recommend the root culture *here*, on English evidence of the results *there*. Now let us reason together, and see what *practice* has amounted to in America.

Turnips, beets, even carrots, are uncertain crops here, for our Summer climate. Scarcely one year in three do we get a good crop of either. The carrot and beet are far surer than the turnip or ruta-baga, which is liable to be early destroyed by the fly, and, if not so destroyed, stunted by drouth afterwards. Such has been my experience for twenty years, and upwards, no matter how much the *occasional* crop may be, *a full crop is the exception, not the rule*, in America. The great crops we hear of—the short ones we know nothing about, in the papers. These crops are not reliable for a yearly supply of stock food, even in case they were altogether desirable. I have seen, both in the fields of others, and in my own, excellent crops of sugar beet, carrot, mangold-wurtzel, and ruta-baga. I have also seen in the same fields, in other years, the same kinds of crop, cultivated with equal skill, and good husbandry, yields that were hardly worth the pulling.

In England, the turnip crop (ruta-baga) is a "preparatory" crop for wheat or barley. It is largely fed to stock, with straw—the turnip to give sustenance and fat; the straw to fill up the stomach, and distend the intestines of the animal, with the additional object of increasing the manure. The climate of England is mild—scarcely colder in any part of the Winter than our November or March; the turnips lie out in the fields all Winter, unfrozen, and constitute a green food for the stock. Hay is little used there in common stock feeding.

Here, during cold weather, the turnip, beet or carrot, unhoused, is frozen stiff, and must be buried in pits, earth covered, or put in cellars to keep at all.

Fed in cold weather, except in moderate quantities to milch cows, they give no extra flesh, and from their cold, watery nature, scour young calves, and lambs. This I *know*, from several years trial, until obliged to abandon it, having adopted it from theory drawn from *English* practice. For early lambing ewes, moderately fed, they are useful; also for early calving cows. But one quarter the quantity of soaked oats is better; or one eighth the amount of Indian meal. All this I know from *thorough trial*. I once put up in the stable, a thrifty four year old steer, grass fat in October, and began feeding him on ruta-bagas, and sugar beets. I had a fine crop, which my English herdsman had raised the previous Summer, and as he had all along boasted of their great excellence in "fattening bullocks," I determined to give him a fair trial. The steer was fed twenty-five pounds of good timothy hay daily, and began by eating half a bushel of roots. The latter were increased day by day, until he consumed four, five, six bushels a day, and one day, when a trial was made to see how many he would take, he swallowed eight well measured bushels! The "dung" was enormous, to be sure, but neither the flesh, nor the tallow increased so much as a peck of Indian meal would have made; and after so keeping him, in perfect health and condition for two months, the steer was slaughtered, not having gained so much flesh and tallow as ten bushels of corn meal would have made

I met, the other day, one of the best Scotch farmers in the United States. He owns a large farm, on which he has lived many years, got rich by farming alone, and has annually fed, for many years past through the Winter, large numbers of cattle and sheep for market. He feeds hay, straw, oil cake and Indian meal to the cattle, and unground corn to the sheep. I asked him if he ever fed roots? "Never," said he. "Roots would scour and freeze them to death. I tried them, and condemned them years ago. They'll do in Scotland, England and Ireland, but not in this country."

Such, then, is my story. It may strike many with surprise, after the repeated recommendations in all the agricultural papers of the value of "root crops" for stock. I may be charged with revolutionizing "backward." I can't help that; but such is my deliberate opinion, based on many years observation, and practice. L. F. A.

Erie Co., N. Y., March 1858.

Importation of Merino Sheep into the United States.....II.

The communication of G., in our March issue, page 71, has called out two responses, one from H. H. S., Sullivan Co, N. H.. the other from C., Dutchess Co., N. Y. They both send us the extract below. The point at issue will be readily seen by comparing the following with the statement of G. in our last.

Extract from an Essay on Sheep by ROBERT R. LIVINGSTON, published in the year 1809, by T. & J. Swords, New-York, 1,000 copies of which were ordered by the State Legislature, for its own use, and 500 additional copies by the Society for the Promotion of Useful Arts.

On page 7 of the Preface, Mr. Livingston says: "Knowing the United States to be peculiarly adapted to short wooled sheep, I was eager to put them in possession of this invaluable stock. And I shall not envy the glory of the Argonauts (which consisted in bringing the fine wooled Mingrelian sheep into Greece) if I can successfully plant the Merinoes of Spain in my native land.

It unfortunately so happened that during a greater part of my mission, a number of my fellow citizens were suitors at Paris for debts unjustly withheld; for relief from embarrasments into which the perplexed and varying laws of trade, and in too many instances, their own imprudence involved them. As few days past in which I had not, either justice or favors to ask for others, I thought it improper to ask the latter for myself, but hoped to attain my objects (more gradually indeed,) by selecting two pair of the finest Merinoes I could find, and sending them over under the care of one of my own servants; believing that so small a shipment would not be noticed, and intending to follow them by others. They arrived in safety in the Spring of 1802, and was, I believe the *first couples ever imported into the United States*. I became the less anxious on the subject, because I had the satisfaction to learn that Col. Humphrey had succeeded, some time *afterwards*, in introducing a much greater number, direct from Spain, so that I believed a foundation was laid for their perfect establishment. After my return from Italy, being no longer an officer, I obtained permission to ship others that Mr. Chaptal allowed me to select from the best bred flock in France. I was astonished when I found upon my return in 1805, that the introduction of Merino Sheep had excited little attention, as that, although the Legislature of Connecticut had very properly noticed the patriotic exertions of Col. Humphreys, none of his sheep had been sold in this State. I had also the mortification to find that, notwithstanding my injunction, mine had been less extended than I expected. Nay, I learned with surprize that a flock of near one hundred of half and three-fourths breed Merinoes from a ram sent out by Mons. Delessort, to his farm at Rosendale, near Kingston, had been sold at Vendue, at a price inferior to that of common sheep, and that above half of them had perished from neglect the following Winter.

I knew the importance of the object, and I resolved to leave no means unessayed to convince my fellow citizens of it. I began by purchasing all I could find of the scattered remnants of Mons. Delessort's flock. I picked up twenty-four ewes, and the price I paid for them attracted the notice of those who had seen and neglected them."

Smoking Chickens—How a Dollar was Saved.

An old subscriber, now in Norristown, Pa., writes that having moved into a place where ground is reckoned by *feet* instead of *acres*, and retrenchment being the order of the day, he allowed his subscription to run out...." But our old friend the *Agriculturist* was much missed, and wife often regretted that I did not renew. I allowed it to pass on, however, until recently a trifling circumstance occurred which has stimulated the enclosed remittance. Some time since I purchased four pullets and placed them in a coop to be fattened. In a few days one was taken with roup, and recollecting to have read in the *Agriculturist*, that some one recommended corn cob smoke as a remedy, I turned to the article, at page 169, vol. 14 with an editorial remark, that, "he did not tell how often to smoke 'em." The four pullets were confined in a coop, with a floor one foot from the ground, and half of this floor of slats. I did not separate the fowls, but made the smoke underneath, once a day, keeping it there about half an hour each time. The sick bird commenced to improve from the first smokings and the others fattened kindly. Now as the four pullets cost one dollar, and I would likely have lost them all without some remedy, and I knew of none, I calculate that this information saved me the dollar, and I accordingly invest this dollar in the *Agriculturist*, trusting that it will make a return in a similar way." B.

[The article referred to in Vol. XIV, states that in keeping 600 to 1,500 fowls together, the writer found the roup to prevail badly, until he adopted the plan of collecting all his fowls in a hen-house, and building a corn-cob fire which produced a smoke so dense that only objects in a direct line with the window could be seen. The poultry seemed to enjoy the smoke exceedingly; the cocks crowed and the hens sung more than at other times. The smoke cured the chickens.... The writer further stated that he had himself been troubled with a throat affection (chronic laryngitis) for fifteen years, but this was cured by being much in the smoke with his poultry.—ED.]

Poultry Profitable in Cities.

To the Editor of the American Agriculturist:

The query in your January number "will poultry pay," induces me to send you my small experience. I have for the past three years kept, in an iron yard of this city, about an average of ten hens, mostly of the common breeds. I have been obliged to buy all their feed at retail prices, *i. e.*, by the bushel. I have kept a debit and credit, rating the eggs at retail store price. The balance on the 1st. inst., stood in favor of the biddies $23 68—If poultry with nothing but iron to scratch amongst will pay at this rate, what should it do in the broad fields? It must be noted that this calculation is simply of the feed and eggs.

A Rock Islander described a disease from which I have lost two old and two young fowls the past Fall, it proving fatal in every case thus far—The fifth subject attacked was a young pullet. I gave her from two to three Homeopathic pillets of Belladonna daily for four or five days; for the first day or two the contest was sharp, after which she rapidly recovered. This was my last case.

N. W. S.

New-York, 1858.

Shall we use Horses or Oxen?

The question is often asked, which of the two, horses or oxen, is most profitable for farm work? We do not propose attempting to settle the point, but simply to state some of the pros and cons, leaving our readers to strike the balance.

The advocates of oxen say that the first cost of a yoke of oxen is not more than half that of a span of good working horses. And then, the wagons, harness and other rigging necessary for horses is twice as expensive as the outfit needful for oxen. The expense of keeping oxen is much less than of horses; less by one-third, say some. One can hardly enumerate the accidents to which horses are subject; the diseases which prey upon them are about as numerous as those which afflict the human family, and have to be continually provided against and treated with medicine. If they are young or spirited, none but a trusty teamster can manage them. The owner must be constantly on the watch, or they will be taxed beyond their strength or driven beyond their natural speed. And then the wear and tear of harnesses, wagons, shoes and other rigging, is considerably greater with horses than with oxen. As to the work done by oxen, there is hardly anything which they can not do as well as horses; and some kinds they will do better. Heavy work, such as hauling out manure, logs and rocks, and plowing stony lands, and breaking up stiff fallows, all work which requires a strong and steady pull, they do better than horses. Some persons complain of their slowness in work, and their lack of endurance; but it is claimed that such farmers stint their cattle in good fodder, and in other respects treat them with neglect. Give them warm, clean and well aired stables, and plenty of generous feed, so as to keep them in good flesh, and it is believed that they will do as much work, annually, as horses.

In this enumeration, it should not be forgotten that the manure of oxen is more valuable than horse dung; that oxen increase, in value until they are twelve years old, and after that may be fattened for the butcher. When horses are twelve years old, they depreciate in value rapidly, and soon become a burden.

The advocates of the horse claim, on the other hand, that while the first cost of an ox-team is considerably less, the expense of keeping is about the same, if both are well fed; and, that the horse will do more work, and on the whole, more satisfactorily, than oxen. A good pair of working oxen will weigh 3,000 pounds, and a good span of working horses, 2,000 pounds; is it, then, reasonable to suppose that it will cost any more to support the 2,000 pounds of flesh than the 3,000?

As to drawing heavy loads, there are, indeed, cases in which ox-strength is the most serviceable; but ordinarily, a span of heavy, well-trained horses will do every thing required on a farm. It is generally conceded that in very warm weather, the horse has greatest power of endurance. A yoke of oxen can not be divided in working, but a span of horses can. One can work, while the other is resting; one can be rode or driven away on errands, while the other is plowing out the corn; or two teams can be made of one span, for raking hay, &c., &c. It can not be denied that horses will plow a field quicker than oxen. It is also proved by experience that a yoke of oxen can not be worked hard and fed high for more than two years in succession. The third Summer, they will lose their appetite and strength, and must be turned out to pasture.

Every farmer, too, wishes often to ride with his family to town, to church on the Sabbath, and throughout all the neighborhood on business or pleasure; but Buck & Bright would hardly answer this purpose. A good span of horses is one of the greatest delights of the farmer's sons; without this source of enjoyment there would be far fewer attractions in a life of agriculture than there are at present.

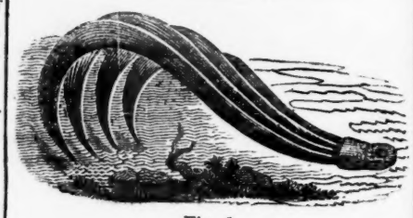


Fig. 1.

Making Bush and Root Pullers.

The publication of the above engraving in the January *Agriculturist*, page 13, has called out several enquiries from distant Western subscribers for specific information as to the dimensions of the parts of the implement. In order to answer these questions we have made the following diagram in outline, and give the figures from actual measurement of one before us.

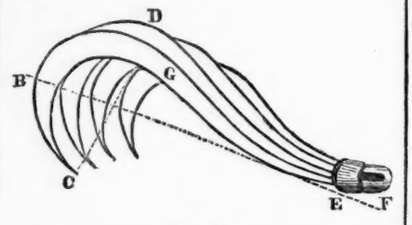


Fig. 2.

The hooks (*G*,) are first made separately, from a bar of iron, say 1¼ inches wide and ¾ inch in thickness. Neither of the above engravings give the exact form of the hooks—they are now made of uniform size throughout their entire length, saving that at *C*, they are hammered out to a blunt point. Three or four or more of them are placed side by side at *E*, but bent so as to spread apart about 6 inches at *D*, and about 3 inches at the points. At *E*, the flat ends are partially welded and flattened on the side to a wedge. The wedge end is embraced by a half ring or staple, *F*, of 1 or 1¼ inch iron, round. This is placed upon the ends of the bars, the whole encircled with a strong band say 2½ inches wide, and the band staple and bar ends are then welded solid, leaving the ring on *F*, for attaching the chain. The outside length of the bars from the band *E*, to the point *C*, is 32 to 34 inches. Distance from *B*, to *F*, 25 inches. From *B*, to *E*, 20 inches. From *C*, to *D*, 14 inches, outside measure. From *C*, to *E*, direct, 16 inches. From *F*, to *E*, that is from outside of staple to inside of band, 5 inches.

Mad Itch in Cattle.

To the Editor of the American Agriculturist:

Will some one give the farmers in this region of country some information through the *Agriculturist* concerning a peculiar disease among cattle, known here by the name of Mad Itch. This fatal disease made its appearance among our cattle on the 17th of September, and in two weeks destroyed nine head, worth between $200 and $300. It is a very uncommon disease here, and there is a great diversity of opinion respecting it. The general belief is that it is caused by allowing the cattle to eat the chewed wads which the hogs leave after feeding on green corn stalks. Our cattle had been running with the hogs thus fed—a universal practice in this country—but whether that produced the disease or not I am unable to say. If it did, why did it never kill them before, or why are not others' cattle killed that were fed in like manner?

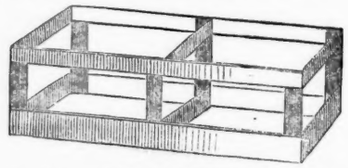
The symptoms of this disease are very strange. It commences with a slight spasmodic jerking of the under jaw, so slight at first that it would hardly be noticed. The animals commence rubbing the side of the head at the same time, gently at first, but it soon becomes more frequent and violent. They now refuse to eat, froth at the mouth, the eyes become wild and glassy, and they appear to suffer much, walking continually when not rubbing their heads. The jerking now is so violent, as to almost throw them off ther feet, and they rub their heads against every stone, stump, or tree they meet, pressing with all their strength and rubbing until they bellow with agony. They continue thus until the side of the head, nose, and joints are a mass of blood and jelly to the bone. The head and jaws generally swell to a great size. They finally become exhausted, lay down and die in about 36 hours from the time they were taken. If some of your correspondents can give us an insight into the cause and remedy, you will greatly oblige, with many others, your humble correspondent and subscriber. JOHN W. ENGLISH.

Auglaize Co., O.

Another Feeding Rack

To the Editor of the American Agriculturist:

I suppose the reason our reading farmers communicate so little of their experience, is because they consider many things connected with their own operations too simple or trifling to be published, and did I follow this first prompting, I should not now write. [We are glad you did not and hope others will not.—ED.]. I have seen several kinds of "Feeding Racks" in the *Agriculturist*, and I here give a rude sketch of the kind I use.



The six upright posts are 4 or 4½ feet high. The board running around the bottom is 16 inches wide; the two side pieces 12 feet long, and the end pieces 6 feet long, which makes the rack or box 12 by 6 feet, and 4 or 4½ feet high, with two divisions made by the cross pieces in the middle. The board running around the top is 12 inches wide. The whole nailed together, as seen in the sketch, makes a strong affair. The top boards prevent the underlings from being driven headlong into it and breaking it to pieces, as occurs occasionally with those previously recommended. The cattle being obliged to thrust their heads in to feed, there is no hay or fodder wasted whatever. Besides, the top board makes an excellent rubber for beef cattle while in the yard. I have, of course, rubbing posts, but for the top of the neck this is admirable. It may also be roofed and bottomed if thought desirable, in a very simple manner, and still not destroy its portability. GEO. HILL.

Lycoming Co., Pa., Feb. 19, 1858.

A CHARMING COUNTRY.—A large portion of the swamps of Florida are said to be capable of producing 500 bushels of frogs to the acre, with *alligators enough for fencing*.

Current Notes from American Green and Hot Houses.

RARE AND NEW GREEN HOUSE PLANTS.

PIMELIA *spectabilis.*

A beautiful Thymelaceous plant, a native of New-Holland. It is a low shrub of slender growth with small linear leaves, and large heads of light rose colored flowers, which are produced in great profusion from the ends of the shoots or branches. It is one of our finest green-house and exhibition plants, but is, as yet by no means in common cultivation, being rather difficult to propagate by cuttings, and on this account, not as well known as it should be. It, however, seeds very freely when a few years old, and will no doubt soon be more generally introduced. It grows rapidly, and the ends of the shoots should be pinched two or three times during the season to give it a bushy form. It requires careful treatment during the hot weather, and will not bear exposure to the direct rays of the sun, but should be kept under glass and shaded. It will grow freely in a light sandy loam with a good portion of leaf mold added, and should not be repotted during the Summer; early in the Spring, or in the Fall is the best and safest time for the operation.

CHOROZEMA *elegans.*

This is a variety of *Chorozema varium*, but is more dwarf in habit, and with leaves nearly round. The flower spikes are not so large, and of a paler color. It is a good variety, and makes a neat plant. The "chorozema's" are a very showy and useful class of plants, producing their bright crimson flowers through the entire Winter and till late in the Summer, when they should be closely pruned, and as soon as the young shoots begin to grow they should be repotted in a light loam, with a free drainage. When large plants are desired, for blooming in the Winter for a supply of cut flowers, one year old plants should be selected, and by the end of August, shifted into an eight inch pot, and they will soon begin to grow vigorously. They should then have the young shoots stopped once or twice, which will greatly increase the number of the flower spikes, and as the Autumn is drawing to a close, they should be placed in a part of the green-house where they will receive the full influence of the sun.

AZALIA *murrayana.*—This is a very distinct and valuable variety, large and good shaped flower; may well be in every collection.

Az. Narcissiflora.—A new Chinese species, very distinct; of dwarf bushy habit; slow growth and profuse bloomer; remains a great length of time in flower; color, white; double. When the flower has been expanded a few days the center becomes bright green; fine for Winter flowering, and forces readily.

Az. Bealii.—This has somewhat the habit of "*Beauty de Europe*," but not of so free growth; rather delicate; the flower is beautifully marked, blotched and striped very regularly with cerise on white ground; very extra.

Az. amœna.—Another new Chinese species; very distinct; bushy habit; bright, glossy, round foliage; small flowers, each appearing like two *corollas*, one within the other, or hose in hose; color, bright rosy purple; good Winter flowerer.

Az. obtusa.—This is one of the finest scarlet; a Chinese species, distinct; glossy foliage, and good habit of growth; flowers very abundantly.

Az. Vittata rosea.—A very free and strong growing upright species from China, and the freest for Winter flowering; color, clear white ground, striped and spotted with rose. There are several varieties of this species, but this is the best; the others are very liable to come false in their colors.

Az. Ramentacea.—A new Chinese species of low bushy habit; light pale green, and very smooth foliage; pure white flowers, small, but produced in the greatest profusion; very distinct.

Az. Rhododendroides, or hybrida.—This is a *hybrid* between the *Azalia* and *Rhododendron.* The strong wood and large glaucous foliage of the *Rhododendron* is very marked in the habit of the plant, as also in the flowers, which are in very large trusses, erect, and of great substance; color, pale rose.

Az. Rosalie.—A variety of slender, upright habit, and very narrow leaves; color, transparent salmon, richly spotted with a very dark, novel color; good.

Az. Beauty of Europe.—This is one of the very best; small foliage; medium size bush; compact habit; color, pink, striped with carmine, blotched white; very distinct; late bloomer, and a fine exhibition variety.

Az. Crispiflora.—A very distinct and novel variety; large flower, with the petal heavily crimped; color, rich rosy lake; very robust habit; dense foliage.

Az. Duke of Devonshire.—A strong growing variety, with large, bold flowers of good substance; one of the best scarlet selfs.

Az. Empress Eugenie.—This is a dwarf growing variety of the "variegata" section, and quite new last year; it is of exquisite form; color, transparent rose, and well spotted.

Az. Eulalie Van Geert.—Another new variety of last year; medium growth; color, very large blush pink; intensely rich spotted flower of great substance, extra fine.

Az. Gem.—A richly spotted variety; fine form and substance; very extra; medium habit.

Az. Gledstanesii.—A medium sized bush; small foliage; color, white, striped with red; good form, and one of the best striped varieties.

Az. Glory of Sunning Hill.—This is a fine double flowering variety, of free growth; color, rose; very extra and scarce.

Az. Imperatrice Josephine.—A dwarf growing new variety of last year, of excellent habit; extra formed flower; color, bright cerise.

Az. Iveryana.—A free growing variety; color, pure white, well striped with red; a very elegant flower.

Az. *ovata.*—A new Chinese species, with large round glaucous leaves and stiff habit. It is very distinct and partakes of the character of the "Kalmia," especially in the form of the flower, which is salver shaped, produced in flat clusters at the end of the shoots. It has not as yet bloomed very freely. The color of the flower is rosy lilac, with very small black spots.

Az. *violacea superba.*—Fine rich purple violet color; one of the best purple colored flowers; strong grower.

Az. *Beauty of Reigate.*—Very dwarf bushy habit, symmetrical grower; color, white, striped with rose; fine formed, and distinct flower.

Az. *Perryana.*—A medium grower, and an excellent shaped flower; color, orange scarlet; fine and distinct variety.

NEW HOT HOUSE OR STOVE PLANTS.

GARDENDIA *devoniana.*

This is one of the finest of the African Gardenias, and it is related to "*G. Stanleyana*," but much superior to that species. It is a strong growing shrub of erect habit. Leaves large and thin; when young, pale green, but when full grown, a dark blue green. The splendid flowers are solitary; corolla with a slender cylindrical tube eight to ten inches long, pure white at first, but gradually changed to a pale yellow. It is from Sierra Leone, and needs plenty of heat and moisture while making its growth; after which, it requires to be watered more sparingly, and also a cooler and drier atmosphere.

GARDENIA *nitida.*

Another new species from Sierra Leone; very distinct; large, bright shining leaves; a rather dwarf habit. The flowers have a leafy calyx, are pure white, and very fragrant, more than twice the size of the common "Cape Jasmine." It is valuable on account of its flowering in the Autumn, as do all the African species. It produces its flowers very freely, and if grown in stove heat will keep in bloom until mid-Winter.

CLERODENDRON *splendens.*

One of the very best and most showy of stove climbing plants, when treated properly. It is a native of Africa, where it grows among low shrubs, with its roots completely shaded from the sun. Under these circumstances it attains the hight of ten or twelve feet. When fully exposed to the sun it becomes stinted in growth and not more than three feet high, flowering sparcely. It grows best in a rather stiff loam, not over-potted, but the pot completely shaded from the sun; moisture in abundance is required, both over head and at the root in the growing season. When its growth is completed and the wood ripened it requires at least four months rest, with very little water at the root, after which it will produce throughout the Winter its long spikes of brilliant scarlet blossoms. There are three varieties of this species—differing only in the color of their flowers.

DIPLADENIA *crassinoda.*

This is a pretty little climbing plant, belonging to "Asclepiads" and well adapted for training over ornamental wire-work. It is of slender growth, and produces from every joint large clusters of delicate rosy pink flowers. It requires a rich loamy soil and plenty of moisture during the growing season, and when done flowering it should be allowed a period of rest, by gradually withholding moisture and placing it in a cool part of the stove or in the green-house, until the following Spring. The plants should then be fresh potted, cut back freely, and placed in the stove until the flowers begin to expand. If removed into the green-house, they will remain in bloom throughout the Summer. The flowers are as large as the Ipomæa, or Morning Glory.

ESCHYNANTHUS *miniatus.*

This species, a native of Java, is readily distinguished by its very short, dish-shaped calyx, with scarcely any distinct marginal lobes, and its very broad and dense foliage. It produces vermilion colored flowers with a yellow star in the throat. It has a trailing habit, and delights in a moist atmosphere, thriving in any light porous soil, suspended in a pot or on a block of wood.

CENTRADENIA *rosea.*

A neat and showy little plant, with copper colored foliage and stems, and white flowers tinged with lilac which are produced in masses over the whole plant from January, until late in the Spring. It is very easily cultivated, but requires to be placed in a light, airy part of the house to flower freely. Cuttings rooted in February make nice flowering plants for the following Winter. They should be grown in a light sandy soil, and by the end of June they should receive their last potting for the season, when they will soon become bushy plants. If allowed to become somewhat pot-bound, they will flower more abundantly.

Fig. 1—PINUS PINASTER, OR CLUSTER PINE.*

Plant Evergreens

In every place, in all combinations, in belts and in groups; as single trees and in masses; for Hedges and for Avenues; at the entrance and upon the Lawn; for the Prairie and on the rocky steep; in the deep dark Glen and on the Mountain top: for protection from Wintry winds and from Summer's heat; to guard the Nursery of tender plants, and the Cattle sheds; to screen the Cottage door or to clamber over the grey Church wall; everywhere the *tasteful hand* may appropriately introduce some plant whose leaves die not when the Summer is gone.

The great diversity of habit, color, size and form, affords a wide range for our choice, enabling us to find some evergreen plant fitted for each place and purpose. The gigantic Pines, almost coeval with the world itself, the graceful feathery Hemlock, the unique Firs with narrow needle-like leaves; the Laurels, Rhododendrons and Magnolias of the broad-leaved tribe; the Shrubs and Creepers, Trailers and Climbers, down to the never-to-be-despised Mosses. What resources are at our command!

Yes, plant evergreens—but beware! If you are destitute of good taste you will wofully expose your destitution here. If you are careless or ignorant you can perhaps trifle with other plants, but will find yourself rebuked when you plant an evergreen. Whether you have a single tree to plant in the door-yard of a Cottage, or thousands upon grand Lawns it is well to know what you wish to do and how to do it.

Regard should always be had, to the habit of the tree you are to plant, the hight it will probably attain, and the character of the foliage. To plant a White Pine, which in its native habitat grows 100 to 180 feet high, directly under the windows of a small house, on a village lot of 25 feet; or two stiff and formal Spruces to stand Summer and Winter, as black, spectral sentinels at the door; are errors so common that every street affords us examples.

In our last volume, page 108 (May No. 1857), we gave a list of the best evergreens with brief descriptions, usual prices, &c. As a majority of our readers have that number, and new subscribers specially desiring it can get at small cost (10c. postpaid) we will not take space here to repeat that list, but give some further descriptions and illustrations of valuable or beautiful trees. The month of May, in this latitude, we consider the *best* season for transplanting evergreen trees.

THE PINASTER, OR CLUSTER PINE.

This is named (*pin-aster*) from the star-shaped arrangement of the cones upon the stem, it is also known by the common name of the Cluster Pine. It is a native of Southern and Middle Europe, but is much cultivated for useful purposes in France, and even in England and Ireland. Resin, tar and lamp-black are extensively manufactured from this tree which is grown for this purpose upon sandy lands unfit for other plants. In this country it has been found hardy, and is being extensively introduced for ornamental planting. Of this tree Loudon says, "As an ornamental Pine, the Pinaster holds the first rank; and no plantation where Pines are admissable should be without it," Its usual hight when full grown is from fifty to sixty feet; it grows rapidly and has a fine luxuriant clustered foliage of light green. It loves a sandy soil or a deep loam being disposed to strike its roots deeply. Wet or clayey lands will not grow this beautiful tree successfully. Where it is planted in groups with other trees it should be placed on the outside of the group, for its light green color and strongly marked foliage give the appearance of comparative nearness to the spectator. Trees of a darker color and more delicate foliage planted as a back ground will aid the perspective by the appearance of receding from the eye. Vast wastes of shifting sands, in various parts of France and elsewhere, have been planted with the Cluster Pine, and they now yield a large amount of fuel, resins, as well as of lumber—the last of course inferior in quality.

THE PINUS SYLVESTRIS, OR SCOTCH PINE.

This is found in great abundance throughout Europe from the Mediterranean to Norway. In favorable situations it attains the hight of from 80 to 100 feet. The branches are disposed in whorls and have an upward curve; but in old trees become somewhat pendant. The color of the foliage is a dark sombre green, though in Summer the young shoots give the tree a lively hue. The leaves are glaucous and in pairs; in young trees they are from two to three inches long. The extensive forests of Scotch Pine in Europe have afforded the most valuable timber for civil and naval architecture from the time of the Greeks and Romans to the present. A single forest in Scotland is estimated to have produced 1,250,000 trees. This tree has been extensively cultivated in Great Britain to supply the place of the natural forests now becoming exhausted. The Laplanders and Fins grind the inner bark of this Pine, mixed with oatmeal for the purpose of making bread. The tall trunks of this tree are considered the best timber for ship masts. It loves a dry soil, will bear exposed situations, and in ornamental planting is best adapted to large groups having a forest or park like character.

Fig. 2—PINUS SYLVESTRIS, OR SCOTCH PINE.

* The use of a portion of the engravings in this and future articles on this subject, were purchased from the publisher of a new work on Evergreens described on another page of this number

Fig. 3—ABIES ALBA, OR WHITE SPRUCE FIR.

This is a native of Canada, and the Northern portions of the United States. Its usual hight is from 40 to 50 feet, is of a light tapering growth, having a pale bluish green foliage. In artificial plantations it will rarely exceed 30 feet in hight, and may be advantageously used in smaller groups, or as a single tree in the home grounds. It closely resembles the *Abies nigra* of the Northern States in its growth, although it does not attain the hight of the latter. In our figure the artist has failed to represent accurately the fine foliage of this evergreen, he has given it too much the appearance of a broad-leaved deciduous tree.

PICEA PECTINATA.

(European Silver Fir.)

Remarkable for the regularity and symmetry of its form, being always pyramidal, except in very old trees, such as represented in our cut. It sometimes attains a hight of 180 feet with a straight stem and regular horizontal branches. The leaves are very dark green above, with silvery lines beneath. When young it is liable to lose its leading shoot in the Winter, but with a slight protection it soon becomes a hardy and beautiful tree. The cones are very large, cylindrical in form, and rather bluntly pointed at each end. They are some six inches long and two inches in diameter. The tree is of rapid growth, for a fir, and with its horizontal branches heavily laden with conspicuous cones, forms a striking object for the lawn. It is a native of both Europe and Asia. It is one of the most desirable for ornamental planting, but should not be brought too close to the house, as it will not bear the reflected heat of a building. Our engraving does not accurately represent the cone-like form and *regularity of branches* shown in younger trees. As grown in the nursery they are quite attractive, the dark green foliage contrasting finely with the lighter tints of other evergreens. It succeeds best on a moist soil; in dry situations it is usually short-lived. Like most evergreens it is raised from seed sown in early Spring on rather a sandy loam, or a peaty soil. Cover the seeds lightly and shade from the hot sun.

Fig. 4—PICEA PECTINATA, OR EUROPEAN SILVER FIR.

Fig. 5—PICEA BALSAMEA, BALM OF GILEAD, OR BALSAM FIR.

This is the Balm of Gilead or American Silver Fir; a native of America. It attains a hight of 30 to 40 feet. When standing alone it forms a regular pyramid having a profusion of cone covered branches. Its growth when young, is more rapid than that of the European variety but is of much shorter duration, arriving at maturity in 20 or 25 years, soon after which it gives symptoms of decay. From this tree is obtained the Balm of Gilead or Canada Balsam extensively used by the apothecary. The illustration on the right was re-engraved from Loudon's work, but however accurate a representation it may be of trees grown in England, it certainly does not do justice to the Balsam Fir as grown here. We have seen numerous collected specimens which were almost perfect cones, and even in the wild state the majority of trees grow much more uniform, both in branches and cone shape, than the specimen copied in fig. 5. In our next number we will continue the illustrations of evergreens giving some directions for their transplanting pruning and cultivation. The trees we are here describing are preferable on many accounts to the wild kinds found in many parts of the country, yet when the choicer trees cannot be obtained conveniently, we would say get the best you can. The roughest Pine, with its green foliage during the bleak winter, is far preferable to no such object. Begin then now to cast about for some one or more trees to be removed in May.

Fig. 5—PICEA BALSAMEA, OR BALSAM FIR.

Shade Tree Planting.

As soon as the frost is out of the ground, holes should be dug for the Spring planting of trees, and as soon as the ground becomes settled they should be set out. The sap then is only moderately active. Take them up carefully, with all the root you can get. Pare off the wounded parts with a sharp knife; trim out and shorten the tops, heading them back, that strong thrifty shoots may put out for Summer growth. They make a much better, and earlier top than when left with long branches with a sluggish circulation which frequently die the first, or second Summer, and never make a satisfactory or well formed top. If the natural root of the tree be fibrous, or compact in its rootlets like the horse-chestnut, or maple, if they be cut short, and properly pruned of their longer leaders it will be no damage to their future growth if properly set, and covered in at planting.

When planted, if at all exposed to injury from animals, or outside influences, they should be well guarded by stakes. Don't select large shade trees—over three inches at the base of the stem—nor take them out of tall, close, woods. If they be taken from a natural forest growth, let them be from the skirts of the wood; or, better than either, from a nursery. Forest trees are now much grown in nurseries, and they are far the best. Elms, Horse-chestnuts, and Maples are generally the best, making the thriftiest trees, and the finest shades, and the effect is more imposing where they are all used in rotation Elms (*Ulmus Americana*)—the true white Elm of the forest—have such diversity of shape, that even if no others were intermixed, they afford great variety. The Horse-chestnut is compact and uniform in appearance; while the different varieties of Maple, in wood, bud, leaf, color of foliage, and habit of branch, are the most varied of all our forest trees. Oaks, Beeches, Hickories, and Nutwoods generally, are hard, and prongy in root, and mostly refractory livers and growers in transplanting– scarcely one in twenty succeeding, unless taken from nurseries or open grounds. We do not recommend them, only as specimens, or to fill up a wide variety. The Tulip, or White Wood taken from the forest, is refractory also; and the Bass-wood, or Linden, although a fine tree, invites caterpillars, and other destructive insects. Throw in an evergreen now and then, and with your Elms, Maples, and Horse-chestnuts, your shade trees are complete.

The poorer half of one who believes in "woman's right's," says that, instead of himself and wife being *one* they are *ten*, for she is 1 and he is 0.

The Orchard..... IV.

[*Continued from page 84.*]

PEARS.

Unlike the Apple, the Pear is not a *universal* fruit of the temperate zones. It is fitful in its selections of soil, and climate. In quite extensive tracts of country it will flourish more or less—capricious in these, however, always—and over other wide belts of country it refuses to grow almost altogether. The pear of any kind, has ever been a scarce fruit in market; and *good* pears, the scarcest of all. As they have ever been, they probably ever will be; and we shall, before we get through, give some of the reasons. There appear to be some soils, and some countries peculiar to the pear—Normandy, and a part of Belgium, in Europe, for example. There are some localities in the United States where they flourish with tolerable success. There are some other localities where many individual trees of large growth, and advanced age are found, but they are widely scattered, and not abundant.

The reasons why so few pear trees are found in this country are, mainly, two: the uncongeniality of the soil, and the various diseases to which they are liable. Of the first, we need not go into an analysis, even were we able, as an experimental trial can be the only satisfactory solution. Of the second, "blight," in its various character and phase, is the principal; and may be subdivided into "fire," "bark," and "leaf" blight—all fatal in their effects, coming from causes not yet ascertained, nor understood, and for which no effectual cure has been discovered. Here some enthusiastic pear-growing nurseryman may ask: "Why, sir, how do you know all this? Have not millions of pear trees been grown within the past dozen or fifteen years, and distributed broad-cast all over the United States, and thousands of pear orchards established?" To which we answer: Very true; and so have pear trees been grown and distributed throughout the country for three hundred years. Any number of pear orchards have been set out, nursed, cultivated, and—died. But show us the *very first* pear *orchard* containing one hundred sound, healthy trees of fifty years growth, as apple orchards exist, and grow, standing uniform and regular in their rows, and you will show us what, with long years of observation, and particular examination for a thing of the kind, we have not yet found, and we will then confess our error.

Pear orchards *have* been planted—long years ago—side by side with apple orchards, which, with now and then a scattered tree still remaining stalwart and vigorous, giving annual crops of fruit, testify to a congeniality of the soil, and a friendly climate to those individual trees; yet, testifying also, that disease and death have long ago borne down the bulk of their companions, while the apple orchard, planted at the same time, is still full in numbers, as well as vigorous and fruitful, with a promise of long remaining so. Such are the *facts* which support our first assertion that the pear is a precarious and capricious fruit in the United States, and perhaps, with few and far between exceptions, will ever so remain.

Yet, we are not going to talk about the pear simply to discourage the orchardist from growing it. By no means. We would encourage its plantation by every man, especially where experience has shown that it will flourish; and a trial of it where that experience is wanting. No fruit tree grows so vigorously, or withstands so well the vicissitudes of climate, or bears up so sturdily under neglect and maltreatment, or lives to so great an age, or yields such bountiful and continuous crops, as the pear *when* it finds a congenial soil and climate, and remains untouched by disease; that is to say; the tree in its best estate. This fact is abundantly demonstrated by thousands of individual trees which can be found in various parts of our country; and from these isolated examples, and the great value, and delicious flavor of the fruit, we are encouraged to propagate, plant, and cultivate them wherever we can do so successfully. The knowledge that they have grown, do grow, and in all probability will continue to grow, with the appreciation of their excellence as a luxury for the table, should encourage us to continue them, doubtful as may be the result, where past trials have not thoroughly demonstrated that they will not grow and thrive. Thus, then, we proceed to discuss their proper soils, and cultivation.

SOIL AND POSITION.

The pear thrives in various localities north of the cotton growing line, up to 45 deg. east of the Mississippi in the United States, and the Canadas. It inhabits various soils, from a light sandy, or gravelly loam, to a deep, unctuous clay. It thrives on nearly a level with the sea, and on mountain elevations, a thousand feet above, on a dry bottom, apparently unaffected by altitude or depression, and bears the choicest fruit in each extreme, as well as in intermediate positions, showing a decided vitality if in congenial soils, temperature, and aspects. Yet, it evidently has a choice in these, and although it will root, and grow almost universally for a time, latent qualities or deficiencies in the soil, or atmosphere, oftentimes prove fatal to its continuance.

The best soil, from all the observations we have been able to make, however, is clayey loam, with a dry bottom. The most vigorous and aged trees we have seen, stand upon such soils. They have stood there a hundred and fifty to two hundred years, according to tradition, and are apparently good for a century to come, still sound, thrifty, and in full bearing. The most prominent of these were probably planted from seeds brought out by the French Jesuits, who, at an early day, established a line of trading posts, and missions along through the Canadas, and what were then the far Western regions of America, extending from Montreal, along the borders of the great lakes and rivers, to the Mississippi, below the mouth of the Missouri. Here is one of them: "Henry Ward Beecher tells of a pear tree in Illinois, about ten miles from Vincennes, Ind., that bore 184 bushels of pears in 1834, and 140 bushels in 1840, of large sized pears. One foot above the ground, it girths ten feet, and nine feet above, six and a half feet, and its branches spread over a space sixty-nine feet wide. It is said to be about fifty years old."

The seeds from which they sprung were probably brought from Normandy, and the trees are of the original wildling stock, without graft, or inoculation. Their fruit is fair in size, and appearance, but inferior in flavor, and only fit for drying, and cooking—not eatable in its natural state, as compared to the improved standard varieties. There are also many aged trees scattered throughout all the Atlantic States, from Maine to Virginia, still hale, and vigorous, but not equal in size to those of French ancestry, owing, probably to a less fertile soil and congenial position.

These individual cases, then, establish the fact that the pear can be grown on American soil, and that we have localities both congenial to their existence, and bearing, and where they may flourish to the most prolonged period of their natural longevity. We have girted some individual trees which were nine feet in circumference two feet above the ground, sixty feet high, and whose annual crops are fifty to eighty bushels—extraordinary exceptions to be sure, but their companion trees mostly measured full two feet in diameter, or six feet in girt, are forty to fifty feet high, and give annual crops of twenty-five to fifty bushels of well grown fruit. But the question of such size, and extreme long life are unimportant compared with the fact that they will live long enough to pay the orchardist in the production of their crops for his investment, *to a certainty*. Here, we conceive to be the whole pith and marrow of our inquiries. *Will pear orchards pay?* And for a solution of the question he must rely on his own observation and experience, enlarged as it may be by the observation and experience of others having better opportunities than ourselves to judge.

Thus, then, we find that a particular description of soil, as to whether it be light, or heavy, is not the controlling point in determining whether the pear will flourish, and endure; nor is the locality, or particular temperature of the climate to invite or forbid the trial. If one designs to embrace pear culture at all, and prospects look favorable, he must determine within himself the chances of success, and address his energies to its execution. We would advise him, however, not to invest a pear orchard in any locality which has already proved unsuccessful; and where untried, to move with caution, and to a limited extent, at first, in his operations. We know neighborhoods where for thirty or forty years the pear flourished, and then, by a sort of sudden fatality, almost every tree within a few years died out; and although repeated replantings have been made, the last soon died out as did the others. Again, some localities have been refractory from the start, and disaster has followed every attempt at a permanent orchard. Others there are, where from the first they have measurably flourished, and still yield their fruit on many trees which have survived the original plantation, in full success and vigor.

On the whole, therefore, we may conclude, although the pear is uncertain and contingent *in the mass* of its plantations in the orchards, yet where the soil, climate, and atmosphere suits it, a portion of the trees will survive, to an extent, both in numbers, and bearing, to richly repay the planter, or proprietor. The main question is, then, to determine the point where the orchard is to be made, and that succeeding, the question of success is solved, and the uncertainties, or chances of this, each one must take upon, or judge for himself.

PREPARATION AND CULTIVATION OF THE SOIL.

These must be treated mainly, as with the apple orchard. Twenty-five, to thirty feet apart is the proper distance, and the manner of planting the same, and for the detail of this, we refer to the books.

TREE STOCKS.

The finer varieties of pear, (as in what we have remarked in relation to the apple,) usually having a delicate, less hardy, and less vigorous wood than the seedling, we would grow in the same way, with a seedling stock, and work it branch high, relying on the fact that we have seldom known a large tree grown from the root, with a refined wood; while in every large and aged tree that has come within our knowledge, the trunk was a wildling. In adopting this method, the orchardist is certainly on the safe ground, while by taking the opposite course, his prospects are, to say the least, uncertain.

VARIETIES.

These are legion in number; and out of the many hundreds which have been introduced from abroad into American soil, it is but truth to say

that scarce fifty of these have proved uniformly and successfully good. Many celebrated varieties in the land of their origin, have proved altogether refractory with us; others have succeeded but tolerably; while a few have been altogether successful. It is not expected that we shall enumerate any of these, for we find from the proceedings and reports of the fruit conventions, and fruit cultivators that a difference of opinion prevails in relation to them; and avoiding disputed points, we shall leave the choice to individual judgment and taste. From the experience our country has had, however, it is safe to say, that the majority of the most lauded foreign pears have illy sustained their European reputation; and it is better to rely only on those which are unimpeachable in their growth, and bearing—a sufficient number of which we have for all our purposes—and hold fast to the varieties, which, by a long course of cultivation have proved successful beyond dispute.

———o———

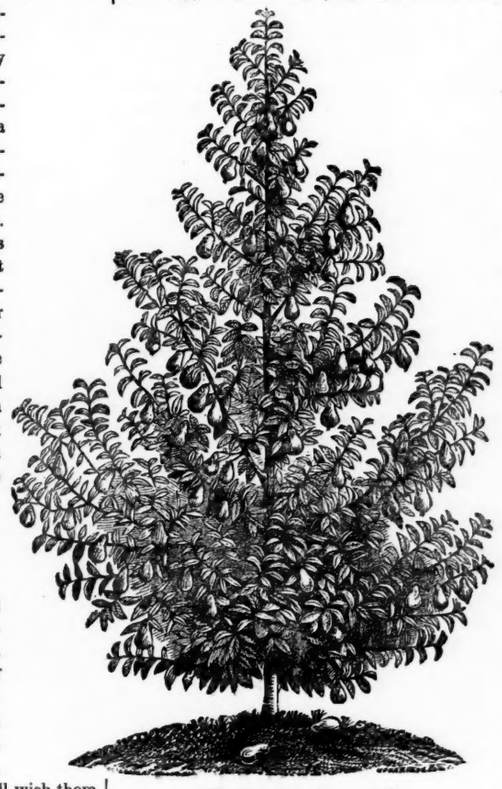
How to Select Trees for Planting?

If you want to get trees that will never bear fruit, buy of some professed nursery agent, who comes along without any certificate of character. No matter what you order, you will stand the best chance in the world to get trees that will die the first season, or if they survive, they will do so poorly that you will wish them dead every year that they linger with you. We have a few of such, six years on hand, and good for nothing. Their days are numbered.

If you want to get half your money's worth send your order to irresponsible nurserymen, or those not of known integrity, and take such trees as they will send you, the bark covered with scale bugs, unthrifty, and the roots badly mutilated. Did it never occur to you, that sharp men who plant trees, for the sake of getting shade and fruit, attend to the business in person, and that it is such trees as *they leave*, that are taken by too many nurserymen to fill the orders of innocent people, who suppose that a nursery is a perfect machine, turning off its living products with as much uniformity as the loom or the anvil? Apple trees are sold at twenty-five cents each. Some of them are worth that money; others are only worth what fuel they will make. There is nearly as much difference, in every tree sent out from the nurseries. The choice of an intelligent purchaser is worth more than one hundred per cent on the amount of the purchase.

If you want trees that are trees, go to the nursery and make the selection yourself, and see them taken up and packed, unless you have a competent agent to attend to it. In making your choice take thrifty trees rather than large ones, and those with well formed heads. You can judge of thrift by the last year's growth, and by the smoothness of the bark. Eschew all trees that are troubled with insects, as you would a pestilence. A fine ought to be imposed upon nurserymen, who will suffer trees covered with insects, to go out of their hands.

The next that demands our attention is the roots. If badly mutilated, reject the tree, no matter how thrifty. If you find numerous small fibrous roots well distributed on all the larges ones, it shows proper handling in the nursery. The tree has been root pruned, and cultivated for the sake of its future owner, rather than to sell. Such a tree will not disappoint you. Buy it, if you pay double price.



Form of a Pear Tree.

To the Editor of the American Agriculturist:

I perceive by a former number of your paper that the Convention of Fruit Growers held at Rochester, N. Y., in discussing the best *form* for a standard Pear tree, decided in favor of the *pyramid*, allowing the trees to branch near the ground. Now I always *allow* all trees to branch near the ground, but I cannot succeed in *making* them do so to my satisfaction. If some practical person would favor your readers with the true method of culture in order to obtain that form in the best and most perfect manner, he will confer a favor on many of your subscribers, and oblige yours, W. F. Cox.

Vergennes, Vt.

REMARKS.

Above we give a model Pear Tree, either standard or dwarf. This form cannot be obtained from a tree which has been pruned to a strait trunk of four or five feet in the nursery. We must begin at least the second year from the bud or graft, and prune back as in the cut opposite, to check the upward tendency of the sap, and throw it into the lateral branches. During the Summer's growth it may be necessary to pinch in the leading shoots for the same reason. If an open space occurs on one side of the tree, which it is desirable to fill, head back the shoots on the adjacent branches to strong buds facing the vacant space. These terminal buds will now receive a large portion of sap, and soon fill the openings with new limbs. Almost any required direction can be given to a shoot by pruning or heading back to a bud upon that side of the branch where an offset is desired.

Bearing year of Apple Trees.

The bearing of Apple Orchards in alternate years is so general, in all the older States, that it has come to be considered a necessity. With some trees, the habit is so inveterate that not a solitary apple can be found upon the branches in the unfruitful year. The whole energies of the tree, and the resources of the soil seem to be exhausted in the fruitful years, so that it takes two seasons of hybernation and rest to recuperate. This habit is a great draw-back upon the profits of fruit growing. In the abundant years, apples are cheap, and the farmer gets but a fair return for his labor. In the scarce year when prices are high, he has no fruit to sell.

Some facts have come under our observation, that lead us to suppose that this habit can be overcome, and that the skillful fruit grower can rely upon a crop of apples every year with as much certainty, as upon any of the root or grain crops. In the front yard of the old homestead, there stood an old apple tree in a deep rich loam. It was kept in grass and bore a large crop of early apples in alternate years, yielding nothing in the interval. By way of experiment, the green sward was broken up, and the whole yard manured and planted as a garden. To the great disappointment of all the skeptics in the region, the old tree changed its habits, and bore very full crops two years in succession. The yard was seeded down and it relapsed, but continued to bear in the years, which would have been barren in the old order.

When a young orchard is put out upon a piece of recently cleared woodland, where there is abundance of vegetable matter in the soil, it bears with much more uniformity every year, than an old orchard under common treatment in the same vicinity. Orchards planted in the new settlements are much more productive than those in the older States for the same reason. The trees find aliment enough in the virgin soil to mature good crops every year.

There has lately been discovered in the Historical Society library at Hartford, Ct., a curious old document, the account book of Henry Wolcott, one of the first settlers of that State. It was kept in short hand, and contains among other things a record of the yield of his apple orchard, at Windsor, for a few years after it first commenced bearing. In 1651 it bore 496 bushels, in 1652, 452 bushels, and in the two following years, 1127 and 1288 bushels, showing no tendency to the alternate bearing, which now marks all the orchards in that region. It is interesting to find among the names of the apples then cultivated, Summer Pippin, Holland Pippin, Pearmain and Bellybond or Belle et bonne, varieties still popular with the fruit growers of our own times.

Nothing pays better for care and attention than the apple. A single acre in this fruit, kept in good heart, by manuring and cultivation, will yield more profit than ten acres, neglected in the ordinary way. The only secret in having apples abundant every year is in keeping the trees clean, and in feeding them. He who has plenty of muck or peat, lime or ashes, and stable manure, need not go off of his own premises to find plant food for his orchard. The breaking up of the turf in an old orchard, and the application of a compost of these materials, will work wonders. Nothing but root crops should ever be attempted in an orchard The fruit and the grain want similar constituents. We have seen apple trees put back for years by a rye crop. The present month is a good time to begin the work of renovating old orchards, and reforming their bearing habits." "Dig about and dung the barren trees," before you decide to "cut them down as cumberers of the ground."

For the American Agriculturist.

Suggestions on Pruning.....III.

BY A. D. MOORE, NEW-YORK.

[*Continued from page 81.*]

The first direction to the pruner will be, *obtain a definite and correct idea of what you wish to do before you touch the tree.* A general vague conviction that fruit trees need pruning or thinning out to keep an open head, by removing weak and conflicting branches constitutes the whole stock of information with which most persons commence the yearly attack upon the orchard. There is no careful study of the habits and peculiarities of each species of tree; no thought of what each individual tree has done in the past, or is expected to do in the future, whether it is prematurely forming fruit buds, or running to wood too luxuriantly; no special care for a weak but important shoot which is receiving too little nourishment because a gourmand above it is monopolizing all the sap and sunlight; no calculation for future years, that the foundation now laid shall be the basis of a sufficient number of branches, filling advantageously every part of the tree while none shall crowd or interfere with its neighbors. Generally, young trees are left to themselves, and when half grown the top is found to be a thicket of brush. Then the tree is said to need pruning and the attack is made. The saw and ax are brought, and in a single hour one third of the top is cut out. A tree should never in this sense *need pruning*. The difficulty should be avoided, rather than remedied; so that instead of felling great branches, the finger and thumb, or at most the pruning knife will be sufficient to *direct* the growth of stalwart limbs.

First then, fix in your mind the general form of a perfect tree of the variety you are about to operate upon; and to this ideal as nearly as possible train your subject, not of course arbitrarily, or in one year, but by patiently studying the peculiarities of your tree, bring it gradually to the desired form. In respect to their shape, fruit trees may be classified into: *globular* or round headed trees, like the apple; *semi-globular*, or goblet shaped, as the peach; and the *pyramidal*, or conical, like the pear and the cherry. It is important that while we divert nature from her wonted course to fulfill our especial ends, we do no violence to her *principles*. Faults there are to be corrected, deficiencies to be supplied, but always obediently to the guidance of nature. There is a typical form, then, for each variety of tree, which should be regarded from the commencement.

In the January number of the *Agriculturist*, (page 24,) was given a drawing of a badly shaped tree to which I may be excused for referring the reader, as it will render the subsequent remarks more easily understood, to have the faults there pointed out fresh in the mind, and by comparing that tree with Fig. 1, on the left, the advantages of the latter form will be readily seen. I have here endeavored to represent a well pruned tree of the round headed class. Though full grown the hight of the tree is not more than 20 feet; the lower branches start at 4 or 5 feet from the ground, nearly at right angles with the main stem. (A "*Fork*" caused by two nearly equal branches diverging at an acute angle should always be prevented.) The branches are comparatively short and thick, filling up well the middle and lower parts of the tree; while the upper branches are not dense enough to intercept the light and air required by the lower ones.

Fig. 2, represents a tree of the pyramidal shape. The attempt to compel a tree having a natural tendency to either of these forms to assume the other, would be attended with much unavailing trouble and probably with positive injury.

But how is this form to be secured? The great difficulty is to make the lower branches grow thrifty and in due proportion to the upper ones. The whole secret lies in *the management of the buds*. Every shoot and branch commences life as a bud, and it is in infancy that their proper number and position must be determined. Leave no more buds upon a shoot whose growth you wish to increase than can be maintained in perfect vigor. This will generally be about one third of the number of buds produced, so that of those shoots designed to receive the largest development two-thirds of the last year's growth must be cut off. These should be shortened in before they start in the Spring. If still the upper branches grow too strong, Summer *pinching* will furnish the requisite discipline for them, of which more anon. This system of pruning must be commenced in the first or second year of the nursery plant.

Fig. 2—A Tree of the Pyramidal form.

As the selection of well formed trees from the nursery is of the utmost importance to us, I would give in Figs. 3, 4, 5 and 6, various forms of trees about the age usually obtained from the

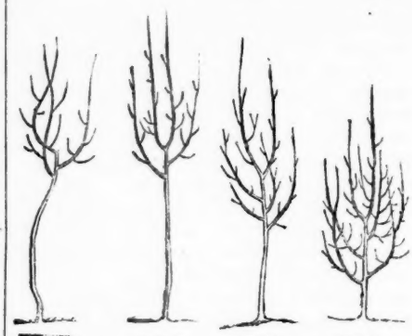


Fig. 3. Fig. 4. Fig. 5. Fig. 6.
(Showing the different forms of Nursery Trees.)

nursery. It will not be difficult to decide that Fig. 3 is a poor specimen, having been grown in a crowded nursery row, and the lower part of the stem, in consequence, is unfurnished with branches. No treatment can make this a satisfactory tree, and if a better one is obtainable the most economical disposition of this tree is to add it to the wood pile. Fig. 4 is better, and may, by severe shortening-in, be made to produce a well shaped head from the branches now upon the stem, but below these it will be difficult to develop a symmetrical growth. Fig. 5 is quite as good as the average of nursery trees, and by proper pruning may be made a well shaped tree, but Fig. 6 is a perfect form, and has been properly cared for from the first year. It is of far more importance to have a properly shaped tree than one of large growth or great age.

The difference in the early pruning of the round headed and the pyramidal tree, is, that in the latter one central shoot should always be left as a leader and no rival allowed to grow perpendicularly; the other branches, growing laterally, the lowest being the longest; while in the round shape, three or four shoots of equal vigor and importance are encouraged, all attempts to preserve a leader abandoned after the "head" is of the proper hight.

As a summary of the points to be especially regarded in pruning, I would give the following rules:

1st. Study the requirements of the tree as to shape and relative vigor of the branches.

2nd. Leave upon the shoots no more buds than can be maintained with the requisite vigor.

3d. The position of the remaining buds should be such, that when the branches are all grown with their future ramifications they will not interfere with each other.

4th. To increase the growth of a weak branch, prune it close at the Winter or Spring pruning, and preserve all the Summer shoots without pinching.

5th. To diminish an over luxuriant branch, leave a greater number of buds upon it, by pruning less

severely in the dormant season, and pinch back, during the Summer, the young shoots.

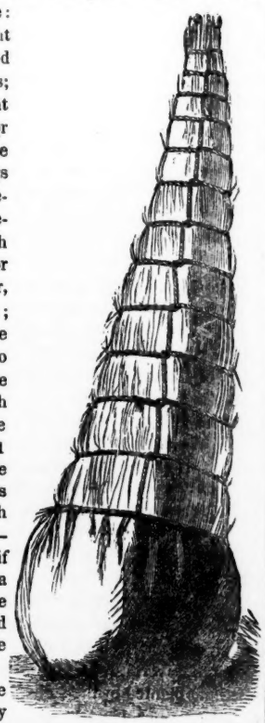
6th. Encourage a horizontal growth of branches except with the leader; this is assisted by having the last bud on the shoot an outside bud, which will grow from the center of the tree.

7th. Let the highest bud on the leader be on opposite sides each successive year to prevent it from growing to one side.

Taking Up and Packing Trees and Plants.

Millions of trees are annually transported from one place to another, of which a large number are injured more or less for want of proper taking up and packing. To pack well is an art requiring no little skill or experience, and in the long run, other things being equal, those nurserymen will succeed far the best who have in their employ the best packer. The great end in taking up and packing all trees and plants should be to retain as many of the fine rootlets as possible, and to pack them in such a way that they will not be mutilated or exposed to air or heat. As a general rule, no roots should be exposed an hour to the sun or wind, either between the time of lifting and packing, or unpacking and putting into the ground. We do not write to instruct experienced nurserymen, who are supposed to understand their business—whether they practice what they know or not—but we will give a few hints for the benefit of those who may have occasion to send from their own private grounds or forests a few evergreens, or other trees or plants, to a distant relative or friend.

The accompanying engraving gives a convenient and neat form of a bundle after it is made up. This may contain a single large tree or a number of smaller trees or shrubs. To make up such a bundle, before lifting the trees from the ground, provide: some straight straw; a good quantity of moss; gunny bags, that is coarse salt or coffee bags; some very large strings or twine, say one-eighth to one-fourth of an inch in diameter—or what is better, tarred rope-yarn; also, strong twine and a needle to carry it; a wide leather strap with buckle upon one end; and labels 1 to 1½ inches wide and 6 to 8 inches long, made smooth upon one side—they are better if covered with a thin coat of white paint, so as to hold and show well the pencil marks.



To make the bundle, begin by placing the trees or shrubs together in a round package, taking care to place both roots and limbs smoothly, so that there will be as little crossing or chaffing as possible. Put plenty of damp moss between the roots. Draw the mass closely together by buckling the leather strap near the roots, and then tie firmly with a *straw* band. Put on two or three other straw bands to complete the form of the bundle. Next, cover the whole with straw, and bind on temporary with straw bands. Let the heads of the layer next the root lop over the buts of the next layer above, and so on to the top, if more than two lengths of straw are required. Now, begin at the roots and bind the straw firmly on with a strong cord, crossing it as seen in the engraving. The whole should be done so neatly that no loose straw ends will be left hanging from any point.

For the roots, lay down the canvass upon the ground, cover it with straw, upon this put some moss, set on the bundle and bring up the bag and sew it with the needle and twine firmly over the but end of the package, as shown in the cut. If to be carried far, especial care should be taken to surround the entire roots with plenty of moss, well packed in.

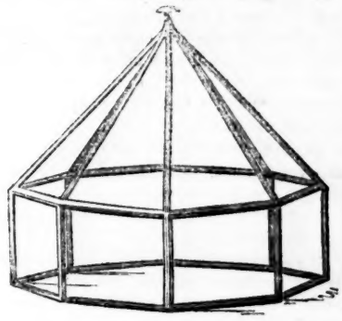
Many recommend dipping the roots of trees and plants in a "puddle" made by mixing any good tenaceous soil with water to a thin paste. This may be advisable where trees are to be long on a journey.

The Garden Raspberry.

There are many varieties of this delicious fruit, each of which have their advocates. They vary in flavor, hardihood and prolific bearing; yet most of them are good, but some varieties much better than others. There is, however, one quality in the raspberry which is first in the inquiry of every one who grows them for market, viz.: will they bear transportation without mashing? and to this we promptly answer, No. *We never yet saw a raspberry* that will go to market as blackberries, strawberries, currants and other small, pulpy fruits will, unless packed in *single layers*, or in such very small quantities in one dish, or box, as to make the carriage very troublesome and expensive. The difficulty lies solely in the shape of the berry itself. It is a thimble-shaped fruit—a hollow cone, with soft, pulpy sides. Of course, when ripe—and it is good for nothing if not ripe—the slightest pressure will pack it into a solid mass of jam, the juice running out, and the fruit spoiled for the table. There is no help for this, only in the light mode of packing in single layers, or cutting off the fruit with scissors, leaving the stem *on*, and the core *in* the fruit, requiring them to be cored by the consumer.

We say that a raspberry is good for nothing unless ripe—we mean *dead* ripe, so that it will almost fall from the stem at the touch. Then they are delicious, healthy and nourishing—no berry sweeter. Thus, then, every one should grow their own raspberries, who have garden room to do so. The common wild black-cap is the *hardest* raspberry we know of for marketing; but it is full of hard seeds, and every body who eats them has to pick their teeth for half an hour afterwards. Yet the people who depend on market raspberries buy them, because they *are* hard, and look well. They are a good berry too, but not to be compared with some of the cultivated kinds for fresh use. They dry well, because they have so many seeds, they suffer the pulps to shrink less than the better kinds.

We know a person who manufactures largely of wines, jams, preserves, cordials, and such like, from the small fruits of all kinds. They buy tons of raspberries, in their season, every year. On inquiry, they informed us that they can afford to pay thirty to fifty per cent more, by the pound, for the garden raspberries than the wild ones, so superior are they in quality for their purposes. Such facts, we presume, settle the question of flavor, and consistency in pulp of the fruit. We can not, then, do our readers a better service than to commend all who have the garden room, and opportunity, to cultivate the raspberry of some approved kind. We prefer those which are *hardy*, without covering, if of good flavor, of which we believe there are some few; but if such can not be obtained, take the others.



Hand Glasses.

Above we present a sketch of a very convenient and useful apparatus for starting and protecting early vegetables in the garden. They are of various forms and sizes. The one here shown is an octagon with frame-work of lead, and glass sides and roof. Those of this kind are on sale at the Agricultural and seed stores. They run in numbers from 1 to 12 and upward. No. 1 is about 5 inches in diameter and costs some 62 cents, while No. 12 is, say 15 inches in diameter, and costs about $2. With lead frames these are quite strong. Bell glasses answer a similar end. A simple square frame with glass sides and top will also do comparatively well, though not as good as the above form.

These Hand Glasses, though costly at first, last for many years, and serve for many useful purposes. They are good covering for diminutive hot beds when placed over bottom heat produced by fermenting manures; and they also serve to protect plants springing up early, but in danger of being touched by frost. Supplied with these glasses the gardener can take plants from the regular hot-bed as fast as they begin to crowd and set them into the open ground, and harden them with the hand glasses, by covering at night and removing while the sun is up. When this is done before hard freezing is over, it will be hardly necessary to keep the ground underneath warm by fermenting manure. It is important to remove or raise them during the warm days, as the plants will be suffocated or scalded.

Seeds of cabbages, cucumbers, melons, tomatoes, egg plants, &c., may be early sown under these glasses, either thinly for remaining, or thickly for after transplanting.

Currant Bushes.

Now is the time to cut currant slips for planting. Many cultivators recommend cutting off all *buds* below the part inserted in the ground, which prevents sprouts coming up from below, and thus making a minature *tree* of it, instead of a *bush*—which is its natural habit. The currant we have found to be liable to the depredations of a small grub, or worm, which breeds from the deposit of an egg near the root, where it works upward into the pith, or heart of the wood, for a foot or two, and then emerges out—probably then taking the moth, or winged formation, and leav-

ing the wood altogether. At the point or escape the wood is cut partially off, and usually breaks, when in the tree, or single stem form, and, of course destroys the plant. Aside from this, the weight of the head compels the staking of the plant, and a close pruning, to answer any good purpose in bearing fruit. On the contrary, planting the slip with buds below the ground, although suckers will grow up, if properly pruned and attended to, the fruit is equally good, and the shrub grows large, and lasts many years. We decidedly prefer the *natural* way of growing it.

In planting currants, we object to the common way of staking them thickly under fences, walls, and such like, and prefer to grow them out in open ground, quite six feet apart, and giving them full and free cultivation, which induces a full crop of well grown, well ripened, and excellent fruit; while on the fence method, the fruit is small, liable to be chocked by weeds, grass, and other foul stuff, and furnishing a harbor to all sorts of garden vermin.

As to varieties, although the nurseryman advertise, and praise a number of new sorts, the old Red, and White Dutch are altogether the best for household purposes, and by far the best bearers that we have tried. With good cultivation they grow large, with full stems, and perfect berries. Everybody who has garden room ought to grow currants in abundance. They are good, when green, for tarts, and pies, and when fully ripe, well sugared, are a delicious appendant to the tea-table—healthful and nutritious, besides making a capital jelly. The black English currant is excellent for jelly, which is a most grateful drink, diluted in water, for febrile diseases.

Horse Radish.

Most people appear to think that a thing which will "grow any where," with neglect, or by accident, is not worth cultivation, though ever so useful, or be they ever so fond of it. Thus it is that the horse-radish—though one of the most highly-prized Spring condiments—receives little or no attention, and is usually found in most gardens to be seen in the vicinity of a sink-spout, at the end of a drain, under the fence, in a shady, worthless corner of the garden, or other neglected places, out of sight and mind—only when it is wanted in early Spring for the table. Then a few meagre, stringy, forlorn, little, pithy, or hollow roots are dug up, the tops cut off and thrown away, and the plants "not worth digging" are left in the ground, neglected and unthought of, until another Spring revives the appetite for a repeated digging of the esculent. Such is the usual "cultivation" which the abused horse-radish gets at the hands of its benefactors!

Now, horse-radish is as much better for good culture as any other plant; and it is so little trouble, that we will narrate our own method of treating it for many years past, by which *we know* that the article is improved, at least a hundred per cent in value and flavor. We plant in a row, or rows, as we would currant bushes; taking a place in the garden, where we do not wish to plow or dig across it, and where it can stand permanently. We then strike out a place, not under a fence, unless it be on the easterly or southerly side of it; nor under the shade of trees—but right out in the warm, open, exposed part of the garden, where the sun, rain and air can hit it fairly, as if it were a beet or onion bed. Staked out, we then threw on to it, a heavy coat of strong, fat, barn-yard dung, spread even over it. We then plow or spade it in, deep as we can, and pulverize the ground thoroughly. Then, with crow-bar, or iron-shod hole puncher (dibble)—which every gardener should have about him—we sink a line of holes in the ground, a foot or eighteen inches deep. When that is done we fill them up with the finest of the soil, well mixed up with manure, to within six inches of the surface. Then we take the green tops of the plant, with about an inch of the root attached—if the tops be large, they may be split with a knife into three or four parts; or if whole, no matter how small—and drop them into the hole, one root in each—top up, of course—and cover them in with the soil. The bed is thus complete, and ready for growing. Keep them clean by the hoe, like any other crop. The next Spring you can dig from the thriftiest, and best grown plants, all you want for family use, still putting back the top, as when first planted, if you take it all out. If you leave a root or two in the place from which you take it, that will furnish increasing roots for the next year.

If you grow for market, let them stand till two years old, as they will be larger, and then you can dig and plant at pleasure.

Culture of Garden Seeds offered in our Distribution.

Peas.—Nos. 8 9 10 and 11. These all require similar planting, except the Dan. O'Rourke, which is a lower growing variety and may be sown in rows nearer together, say 2½ feet apart. The others need 3 feet to 3½ feet between the rows. A moderately dry, rich sandy loam suits them best. Cover one half inch deep. For early use, sow about the midddle of April, and so on at intervals of two weeks until the middle of June to keep up a succession. The four kinds sown at the same time will come in one after the other, the Dan. O'Rourke—the earliest pea known—first, and the Hairs' Dwarf Mammoth—the best, we think—is the latest.

Kohl Rabi—No. 12. Sow and treat in all respects like rutabagas. This yields a turnip, or cabbage turnip above ground, which is cooked while green the same as a turnip. (See illustration and description in our last volume, page 209.)

Enfield Market Cabbage and Alma Cauliflower.—Nos. 13 and 14. These may be classed together in culture. They *head* better, either as early or late vegetables. The hot weather of mid-Summer is not a good season for heading. Hot-bed plants, or those started in the house are better for early use; and the fore part of May a suitable period for sowing seed for late planting. Avoid the use of hog manure as it forms knotty roots. Ashes are a good fertilizer, if there be plenty of organic moisture, such as black earth in the soil already. If not, rotten leaves or well rotted manure may well be added.

Lettuce.—Mammoth Cabbage, and curled Silesia, Nos. 15, and 15 (*b*), are cultivated allke. Sow in the open ground from the first of April to the first of May, and at intervals afterwards for a succession. Lettuce is of most easy culture, requiring only covering and weeding, in ordinary soil, to thrive well, and may often be sown among vines or other vegetables. Its quick growth allows its early removal. If left too thickly in the row it does not form a large head.

Long Orange Carrot and Salsafy, Nos. 16 and 20.—These are both parsnep rooted plants, requiring the soil to be dug deeply—trenched if possible. Sow early, say the middle of April to the middle of May in drills one foot apart, and cover with half an inch of fine soil. Thin the salsafy to three inches, and carrots to six inches apart.

Red Strap Leaf Turnip, No. 17.—Sow middle of April and later for early Summer turnips. Rows fifteen inches apart, and thin to six or ten inches according as they are to be used young or mature their growth. Keep well hoed. New soil is much better than an old garden for them.

Patience Dock, No. 18.—Sow at any time after the frost is out of the ground in rows eighteen inches apart and leave one foot distant in the row. They should be picked from only lightly the first year. The root being perennial will furnish abundance of early greens the subsequent year. Let the bed be in a portion of the garden, where it will be out of the way in plowing.

Round Spinach, No. 19.—Of very easy culture and may be sown in the Fall or Spring. Put in at intervals of a week or two commencing as soon as the ground is settled in Spring. Rows one foot apart. Thin out for use, leaving a little standing through the season for seed, as it is an annual.

Winter Cherry, No. 21.—Sow thin, and treat in every respect as tomatoes. A few early plants from a hot-bed will give fruit much sooner than when sown in the open ground. The seed should be in by the first of May. (See directions last month, page 85.)

Marrow Squash, No. 22.—Plant May first on well manured ground in hills five or six feet apart, and leave two plants in each hill *after* the bugs have had their portion. In the planting dig out a large deep hill and enrich with hog or other manure. Dust young plants with flour and black pepper to keep away bugs.

Flower Seeds.

These were all described and a portion of them illustrated on pages 20 and 21 of the January *Agriculturist*. In giving directions for their culture it is not necessary to enumerate them, singly, as several varieties need similar soil, require planting at the same time and at equal distances from each other and the same management afterwards.

A portion of them are climbers, and require something to train them upon; others make large, bushy plants and need ample space as single specimens, while still others may be grown more compactly, or even in masses.

Most Flower Seeds require only a light covering, especially those having a broad, thin husk. None of them should be covered with more than half an inch of fine soil.

CLIMBING PLANTS—ANNUALS.

Beginning with the Climbing Cypress vine, 33, and Morning Glory, 47—each of which will run 15 or 20 feet when properly trained—we may plant them by the side of fences, buildings, arbors, or No. 33 may be planted in a circle 4 to 6 feet in diameter, around a central stake some 10 or 12 feet in hight, with strings running to the vines in the circle. From the 10th to the 15th of May is early enough for sowing seed in this latitude. Soak them in warm water for a few hours previous to sowing. No. 47 is very hardy and may be sown at any time after the frost is out of the ground. It often springs up from seed dropped the previous season.

SUB-CLIMBERS—ANNUALS.

Nasturtiums, 25, and Sweet Peas, 45, are semi-running or climbing plants. Nasturtiums require a space of several feet to ramble over and are sometimes planted by the side of fences or walls, over which they clamber and bloom profusely The seed capsules, or bulbs make a beautiful pickle. Sweet Peas grow from 4 to 6 feet in hight, and may be bushed with rustic cedar or trained upon twine beside a building. Both are hardy and may be sown the latter part of April or first of May

BUSHY PLANTS FOR SINGLE SPECIMENS—ANNUALS.

Mignonette, 23; Cockscomb, 27; Balsam, 29; Bartonia, 36; Zinnia, 37; Marvel of Peru, 39; Schizanthus, 50. These grow somewhat large and do best as single plants or in rows about two feet apart and one foot distant in the row. They are all hardy annuals and may be sown the latter part of April, or as soon as the ground is dry and warm in the Spring. The seed may be sown where the plants are to remain, or closely together in a bed to be transplanted afterward. None of them mix or hybridize, and they may be mingled together to give variety. The descriptions on page 21 will enable any one to arrange them to the best advantage.

BIENNIAL AND PERENNIAL PLANTS.

Sweet William, 38, is a beautiful flower of variously mixed shades of color. It is a perennial and blooms for many years, beginning with the second year from planting. Fox Glove, 42, is biennial, blooming the second year (not the first), and sometimes the third year and longer. Both of these may be sown somewhat thickly as soon as the ground is dry and warm, and fterward transplant to about one foot apart during the season, or early the following Spring.

GROUPING OR SEMI-GROUPING ANNUALS.

Larkspur, 28; Chinese Pink, 30; Tassel Flower, 31; Asters, 34, 35; Eschscholtzia, 40; Clarkia, 41; Lavateras, 43, 44; Lupins, 46; Flos Adonis, 48. Each of these are usually grown in groups, though they may stand as single specimens or be interspersed with the other classes. They are all hardy annuals of moderate size, and may be sown from the last of April to the middle of May in this latitude. It is usually best to sow the seed where the plants are to remain. Put them in rows about one foot apart, and if to grow singly, thin out to about six inches from plant to plant in the row.

MASSING OR BEDDING ANNUALS.

Nemophilla, 26; Portulacca, 32; Candytuft, 49: Phlox Drummondii, 51. These four are dwarfs in size and are adapted to growing in clusters or masses. The seeds sent out by us are of various colored flowers mixed. The four kinds, or two or three of them, mixed and sown somewhat thickly, form beautiful groups. When seed is to be saved the plants should be grown separately.

A Good Seed Bed.

Almost as much depends upon this, in rearing plants, as upon having milk, for the young of the mammalia. The products of the garden are better than those of the field, mainly, because of the greater attention paid to the seed bed. It is made deeper, richer and finer, three prime qualities in good cultivation. Where the soil is made very fine by a long toothed garden rake, the plant food is evenly distributed through the whole mass. The first root that puts forth from the germinating seed comes into immediate contact with its appropriate aliment, in a diluted state. It is fed on milk, and not on strong meat, as is too often the case in field culture, where unbroken lumps of manure come in contact with the seed, and destroy it. The fineness and looseness of the bed too, facilitates rapid growth. There is no energy of the plant wasted in pushing its roots through hard clods. The roots run out rapidly in all directions, making new mouths, and drinking in constantly larger supplies of food as they go. Nothing pays better, in field or garden culture than labor bestowed upon the seed bed. The harrowing and the cultivating after the plowing pay as well as the plowing. We want more disintegration of the soil.

Gardening for the Ladies.

We wish to say a few words, this month, to our lady readers about gardening. As we have looked into your houses the past Winter, we have noticed your attempts to make home cheerful by cultivating a few house-plants. Some of you have had the skill and good fortune to make a fine show; others have succeeded but indifferently. The verbenas *would* dry up, or damp off; The geraniums would drop their yellow leaves and look scrawny; the roses were covered with insects, and would not bloom. You have almost begun to lose faith in gardening. But we will say nothing more at present on that point, except to refer you to some suggestions on the care of house-plants, in another column. Spring is now opening, and you will undoubtedly succeed better in out-door operations. Light, air, moisture and temperature are better regulated by nature than we can manage them.

Our little sermon to you, now, is suggested by the sight of the early bulbs just peeping up in the warm border on the south side of our dwelling. The snowdrop and crocus are beginning to show their blossom buds; and the daffodils, hyacinths, and tulips are coming up, ready to flower in their turn. And yet, not far away are snow banks. Why should not this sheltered spot be, as it is, one of our family pets? Here Spring shows herself first, and here Autumn lingers latest. We therefore advise you to seek out a warm corner like this, under a high, tight fence, or a wall, or the protected side of your house, and make a bed there for early bulbs. In this neighborhood, also, it might be well to put a few early shrubs, such as Mezereon, Japan Quince, and Flowering Almond; and these might be planted now. It is too late, however, to set out bulbs for Spring flowering; but now, while your mind is upon it, secure the spot for planting in the Fall. Such a spot as this is an excellent one, also, for setting out late flowering plants, which would be injured by the frosts of Autumn, if growing in the open garden. Last Fall, we had Chinese Chrysanthemums flowering in our border, after nearly every plant in other situations had been killed by the cold.

Now is the time, also, to prepare for improvements in your grounds at large. Have you a front yard? Trim up those lilacs, prune out the dead branches of those rose-bushes, and tie up the remainder to neat stakes. Persuade husband or brother to hoe out the weeds from the walks, and to dig up all thistles and foul-stuffs from the grass-plat. A little pure grass-seed and white clover scattered over the ground will do no harm, especially if a light dressing of old compost is added, and the whole is raked off smooth and neat. Of course, you want some flowers in your front-yard. But we would not advise you to set out herbaceous perennials there, or to sow annuals. The latter are a long while coming into bloom, and the former, as soon as they have flowered, begin to die down and to look shabby. Set this kind of flowers in a garden by themselves, a little aside from your front lawn. But prepare a border by the side of your walks, in the front of the house, for such plants as bloom all the season, and whose foliage is always fresh. Or, in place of a formal border, cut out circular beds (or those of any fanciful shape), in the grass near the walks, and fill them with the plants last mentioned. Of these, the best are verbenas, petunias, scarlet geraniums, heliotropes, lantanas, pyrethrum, &c. Any or all of these can be got at low rates, of the florists in your neighborhod. Their perpetual bloom will repay well all their cost. You can exercise much skill and taste in arranging colors. Blue contrasts finely with white: orange with purple; white with pink, scarlet, &c., &c. But why should we attempt to teach ladies anything about the arrangement of colors! They will, however, let us advise them to keep the grass of the lawn shaven smooth all Summer, in order to get the full beauty of this style of gardening.

American Pomological Society.

The seventh session of this Society will be held in New-York City, opening on the 14th day of September next. From the central location of the meeting and the increased interest in the objects this society aims to promote, the next session is likely to be the most largely attended, and the most interesting of any yet held.

IN DOOR WORK.

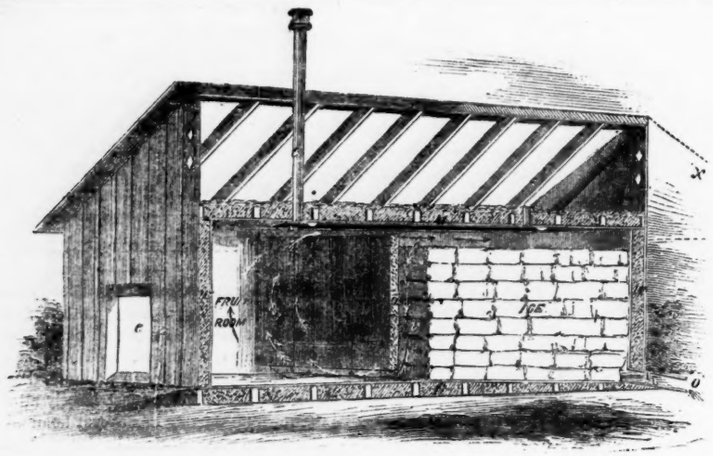
Care of House Plants.

Sometimes house plants are cared for too much. They are nursed to death by over-watering, over-heating, and over-handling. Plants housed only to keep them over Winter, need little light, heat or water. They want to sleep after the activity of the preceding Summer. All they need is to be kept in a dormant state, just above the freezing point. Plants housed for flowering in Winter must have plenty of light, fresh air, water at the root and on the leaf, and a proper degree of heat. Their condition should be made as near as possible like their state in Summer It is of fundamental importance that, in potting them, they should have good drainage—say one-fifth the contents of the pot. Then any accidental excess of water will pass off. When growing rapidly, they should be watered freely. But the very best condition of the soil, in this respect, is that of moisture, without absolute wetness. It is almost as important to keep the leaves clean, by syringing, or sprinkling them, as to keep the roots moist. The unnatural dryness of most parlors and living-rooms shrivels the leaves, and the dust and smoke clog up their thousand pores. Hence, the importance of a daily sprinkling.

Give them also plenty of light. Curtains within and trees without, are an evil. Set the pots directly before the window, and as near to it as possible. Turn them around every few days, so that the foliage may grow symmetrical and healthy on every side.

Don't bake them. Plants are oftener injured by too hot than too cold rooms. The heat of furnaces and stoves, especially those in which anthracite coal is burned, is very concentrated and dry; and this added to the high temperature of most parlors, is more than plants can well endure. A room adjoining a heated apartment is better than the apartment itself. A temperature ranging from 50° by night, to 65° by day, will answer for most plants. And fresh air admitted on mild days is of great importance.

Look out for insects. If you have only a few plants, they may be kept clean by picking off the insects with thumb and finger. If you have several shelves or tables full, take a half dozen pots at a time, set them in a row on the floor, putting a saucer of smoking tobacco among them, fire the tobacco, and then set a box over the whole. In ten or fifteen minutes, every insect will be dead, or so well drugged that they can be easily brushed off the leaves. In this away, a large collection of plants can shortly be cleaned.



SCHOOLEY'S PATENT PRESERVATORY.

Some Interesting Facts concerning Cooling and Drying Rooms.

Above we have made an engraving of an arrangement for using ice, involving the application of principles which it will be interesting to examine, whether the reader be at present so situated as to make any practical use of them or not. Our illustration represents one-half of a building, supposed to be divided through the middle, from the ridge-pole to the ground, in order to better show the interior arrangements. This structure may be a large one, twenty or thirty feet each way, or only a small room of but a few feet in size.

The side walls, *w*, *w*, and the lower and upper floors, *f* and *u*, are made double, being filled in with saw-dust. The upper floor, however, consists of a single layer of boards, nailed upon the under side of the joists, with the saw-dust piled on loosely, a foot or more in thickness. Above this is an open space or garret, under the rafters or roof, with holes in each gable-end to admit a free circulation of air. The main room is divided into two compartments—the fruit-room and ice-room—by the partition *d*. The partition *d*, unites with the walls on both front and rear, but a small opening of a few inches is left both above and below it—that is between the whole length of the lower and upper edges and the floor and the ceiling. The ice, as represented, is piled up in a compact mass in the right division, and covered in the usual manner with straw. A small vacant space, *v*, is left between the ice and the division wall, though this is not necessary unless the entire body of ice is so compact and frozen together as to prevent the air from circulating through it. The floor under the ice descends to the right from *f*, so as to carry any waste water out at *o*. There is an ingenious arrangement in the waste-pipe to prevent the access of air or vermin. It will readily be seen that before the water rises high enough to overflow the right projection, or gate, the upper or left-hand gate dips down into it, so that the opening is always closed with water.

Let us now examine what will be the effect of the ice upon the air in the adjacent room. It is well known that air when becoming warmer rises upward, because it is more expanded and consequently lighter, while colder air sinks downward. In a stove-pipe or chimney it is the heating and expanding of the air that causes it to rise, producing the *draft*. The same thing takes place in a room. Raise the lower sash of a window a little and also depress the upper sash. A lighted candle, or a bit of cotton on the end of a string, held near the upper opening, will show that a current of lighter, warm air is rising and passing *out* at that point; while at the lower opening, at the bottom of the window, a current of heavier, cold air is flowing *in* to take the place of that ascending. This current will be kept up steadily, so long as the room is warmer than the atmosphere without. The same thing will be seen by experimenting with the cracks under and over a door connecting a warm and a cold room. The slightest difference in temperature of the two rooms will produce a very sensible draft. If we darken the room, and admit a few rays of sunlight at some point, and then stir up a little dust from the carpet or floor, we can trace the course of the air as it descends from the lower part of the window, flows along the floor, and becoming warmed, rises in currents, and passes back along the upper surface, returning outward through the upper opening. We may here add, that the most effectual way to ventilate a room is to thus open a window a little both at the top and bottom. It may be further stated, that winds are produced in like manner. From some cause, the air in one place becomes warm, and rises upward, and cold air from an adjacent locality, settles or rushes in to occupy its place. This is followed by air still more distant, so that the simple heating of the air at one point may set the atmosphere in motion for hundreds of miles, thus producing a wind current. The gentle western breezes of the morning, always experienced when there are no other disturbing causes, are accounted for by the fact, that the sun at the eastward is heating the air, and causing it to rise, and the air further west is moving forward to occupy its place.

But to return to our engraving. The air around and among the ice will always be kept cool. It will consequently settle downward and flow along *under* the division wall, *d*, and into the lower part of the fruit-room. At the same time, the warmer air will flow into the ice-room through the opening *over* the division wall. The arrows show the direction of the currents of air. This motion will always be kept up so long as the air in the fruit-room is in the slightest degree warmer than that in the ice room. We see, then, that by such an arrangement the fruit room is practically kept nearly as cool as if actually filled with ice.

There is another important end secured by this arrangement, viz., that the air in the fruit-room is kept very *dry* or free from moisture. The air always contains more or less *invisible* water floating in it. The amount of water in the air depends upon its temperature. Thus: at zero a cubic foot of air contains only about one-sixth part of a grain of water (.18), and we speak of it as a cold dry atmosphere. At the freezing point, 32°, a cubic foot of air contains about 2½ grains of water (2.35); at 40°, about 3 grains; at 50°, 4¼ grains; at 60°, 5 4-5 grains; at 70°, 8 grains; at 80°, 10¾ grains; at 90°, 14, 2 5 grains. At 100°, a cubic foot of air contains over 19 grains of water, or more than 8 times as much as at the ice, or freezing point, or 106 times as much as air at zero. When a cold current of air comes in contact with a warmer one to cool it, the warmer air gives up a portion of its water which descends to the earth, the myriads of little particles uniting together into visible rain drops which fall down to the ground. So when the air is cooled by contact with the colder earth at night, it gives up some of its water in the form of dew. In like manner the surface of a tumbler cooled by ice water within, in turn cools the air around it, and the air no longer having so great a capacity for water gives it up to be deposited upon the surface of the glass. So the windows, being cooled from without, lower the temperature of the air in contact with them and thus withdraw the moisture, which trickles down upon the glass.

Just in this way our ice-room operates. The warmer air of the fruit-room takes up moisture from the articles there; but when it passes over to the ice, being there cooled it gives up a portion of this moisture to the ice, flows back below in a drier condition, to take up more moisture as it is warmed again. This change goes on unceasingly. We see, then, that our engraving furnishes an instructive study. To make the description complete we will alude to one or two things more.

At *c* is seen the entrance to the store room, in which may be kept all kinds of food, vegetables, fruit, &c. Should the air need changing at any time, to get rid of odors, it is done thus: Just under the ceiling is seen a flat slide. Moving this to the left, two holes through it will be brought under the two ventilators, one leading into the open air above, the other into the garret. When this is done, the fresh air from the garret will settle into the ice-room, while the warm air in the fruit room will ascend through the larger ventillator and pass off. In this way the whole air in both rooms will soon become exchanged for a new supply.

There are a great variety of arrangements which can be made on the principle here illustrated. For example, suppose the ice-room were a hundred feet distant, with only an open tube leading to the top of it from the top of the fruit-room, and another tube connecting the bottom of the two rooms; it is evident that the same change of air would take place, viz., a current of warm air *to* the ice room through the upper tube, and a current of cold air from the ice room through the lower tube. Any room in a house may thus be *cooled*, and *dried* also, by connecting it with even a distant ice-house. A chamber may be cooled and dried, by connecting its upper surface with the top, and its lower surface with the bottom of an ice-room or even a cool cellar. In short, any room in a house may be cooled and dried by an ice-room placed anywhere within reach of it, simply by connecting their upper and lower surfaces by capacious air passages.

It is hardly necessary for us to dilate upon the many advantages of a Preservatory on the plan illustrated above. Its usefulness for hotels, eating-houses, for keeping fruits fresh, especially for dairy operations, can, we think, scarcely be over estimated.

Always to indulge our appetites is to extinguish them. Abstain that you may enjoy

Sewing Machines.

But for the importance of the subject we should regret having said anything in these columns about Sewing Machines, simply because so many of our lady readers write for all sorts of information about the various machines that it is utterly impossible to reply individually, and we thus draw upon ourselves the imputation of want of courtesy or attention. Let us write once for all, that we cannot undertake to purchase machines or to decide what kind any one should buy. We have purchased for experiment two of the best machines we could find, and are giving them a thorough comparative trial. When we fully decide which is the better one of the two for general family use, we shall have no hesitation in publishing the result. We are waiting until both shall become equally familiar to those using them, otherwise the newcomer would not stand a fair chance.

Mr. J. C. M., a subscriber in Indiana, writes, urging us to describe and illustrate a low-priced machine which he names. We would do so with pleasure, but we have examined the machine carefully—a near neighbor owns one—and we cannot directly or indirectly recommend it to our renders.

Leaf and Flower Pictures.

Our children, with a little help from older hands, having recently decorated our library with this new style of embellishment, we beg leave to talk about it a little, for the benefit of the ladies and children who read this department of our paper.

Last Summer, a little book was published in New York, by Randolph, entitled "Leaf and Flower Pictures and How to Make Them;" in which the whole mystery of this art was revealed.* We will try and give an idea of the art in few words: Leaves and flowers, of all colors and sorts, are to be gathered in the Summer, and pressed in a large book, such as an old ledger. Thin flowers only should be used, or such as can be pressed thin. Of leaves, collect all descriptions large and small, green and spotted, and especially those which are tinted so beautifully by the frosts of Autumn. Fern leaves are excellent; lichens and mosses can also be used. Give them all a good pressing, and keep them in the dark until Fall or early Winter. Then, on some rainy or snowy day, having provided yourself with a small bottle of white varnish, and a flat brush about an inch wide, open your treasure-book and varnish the leaves on the upper side; then spread them out on a table until they are dried. Then prepare a coffee-cup full of gum-tragacanth, mixed with water to about the consistency of cream. Have at hand, also, a sheet or two of white pasteboard or cheap drawing paper, found at the stationer's, and cut out the figures of any object you may wish to represent—such as vases, wreaths, boquets of flowers, crosses, crescents, &c. Now arrange the leaves, and flowers on the patterns, as good taste will direct, fastening them to the paper by a little gum on the back of the leaves. As a general rule, the smallest leaves and flowers should be placed at the top of each pattern; and the colors should be arranged so as to contrast with each other. These several figures, when made, can be pinned against the side of the wall, or over the top of windows, picture-frames, &c. At a little distance, they have the effect of a fine painting, The whole work, from the gatheing of the leaves in Summer strolls, to the arranging them amid the storms of Winter, is exceedingly pleasant.

* The price of this book is $1 25. Any one of our readers desiring a copy, and not finding it convenient to obtain it elsewhere, may remit the price to us, and we will procure and forward it post-paid. This is our custom, in regard to any *good* book, or books, so far as our subscribers are concerned. As we have before stated, the discount allowed us by publishers, in most cases covers the xpense of mailing and postage.

For the American Agriculturist.

Keeping House in the Country.

"HELP."

[*Continued from page 71.*]

The best way of doing without "help" was first brought to my notice by a farmer's wife of my acquaintance, who was listening with a compassionate air, while a company of housekeepers complained, (as is our wont at social gatherings in Windholme,) of our domestic grievances. "Yes," she remarked, "I do so pity those who have to depend on strangers." "*Depend on strangers*," I repeated in some surprise, "Why how do you manage? Ban you do the work for your large farm alone?" "Oh no," she answered, laughing, "I have five daughters, all trained in my own ways—the best help in the world." I had hitherto looked on a household of well trained *servants* as a happy abode—but from that day to this, I have thought one of well trained *daughters* something higher still." It is true it is not available for all, but do not some possess the materials, who make no use of them? I am far from thinking it is always the fault of the daughters. There are mothers who can not bear to give up to others any part of the housekeeping, who have persuaded themselves that nothing can be done exactly right, if it is not done with their own hands. They are willing, perhaps, to be assisted by some patient drudge—but we can not wonder that their daughters dislike employments with which they have no association but fault finding and hard work.

In the household of my friend, the farmer's wife, each daughter had for a certain time her peculiar charge. When Anna and Mary do the washing and ironing, Caroline and Martha take in hand the baking and cooking. Ellen who attends school, does not find it hard to dress the younger children and set the house in order before her departure. The mother plies her needle and is the presiding spirit of the whole. I asked her once how she had trained them all so well. "I begin when they are very little, and give each one something for her own work. They are soon proud of doing it well and want something more. In that way they have learned almost every kind of housework. Nelly made her first loaves a year ago."

The more I dwell upon this household scene, the more lovely and pleasant it appears. No intruding stranger with sharp ears and sharper tongue sits at the household board, or grumbles in the kitchen because she does not sit there. Happy, thrice happy are those who have five daughters, but as they must form a small portion of the community, I must consider the case of others less fortunate.

Household conveniences and labor saving machines are beginning to render us more independent of domestic service. Gas lights, furnaces, ranges, garret cisterns, patent wash-boilers and tubs, and above all sewing machines, certainly lighten the labors of a household. I have not mentioned the half, and you may not be able to command all these, but have as many as you can. Let your well and cistern be under cover in the laundry. Your woodhouse close to the kitchen door. Keep drains and sinks in good order. Put up a cheap cistern in the garret and save the carrying of water for at least nine months of the year. Plan your house so that the family rooms are thrown near together and the pantries and closets close to where their contents are needed. (I remember a house, where the preserves used *every day* had to be kept at the end of a long entry up two flights of stairs.) Grain and varnish nearly all your wood work, and you will save much more than half of the weary foot and heart labor which, without exaggeration drags down many of the women of America to untimely graves.

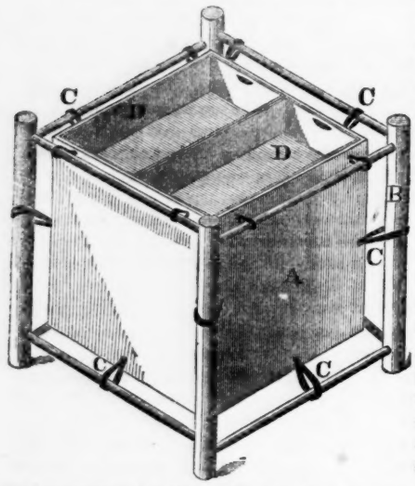
But the most convenient house will not do all its own work, and country help often takes wing at most inopportune seasons. At such times a little girl is a great resource, and as orphan and destitute children are everywhere abundant, comparatively few housekeepers need ever be without one in course of training. Such a child is a trouble and responsibility of course, but it is the only method by which you can always have some household help and be served as you choose. If she prove hopelessly bad, you need not keep her but it is surely not too much to say that in most cases a faithful and careful training must meet with its reward. You need not wait for this reward in the future, for there you may be disappointed. It can not be expected that the best of girls, will not marry at eighteen, if she has a good offer, but now—in times of pressure of work—of company—in the intervals between the departures and arrivals of older helps—nay every day and always, a diligent and obedient child is of great assistance in a family and worth all the trouble of teaching.

We have all to think, and ought to think, a great deal about the proper treatment of those whom we receive into our families, whom we must influence for good or evil, and upon whom so much of our comfort and happiness depends. I allude now to older domestics. I do not think we are in much danger of treating them inconsiderately or unkindly. They keep us in too good order for that; but we are very liable to fall into an opposite error, which is sure, sooner or later, to produce evil effects. I mean that of letting bad work pass unnoticed, because we do not like to find fault. It sounds very amiable, but after all, it is only weakness. It is, no doubt, very difficult to give a reproof, in a perfectly right spirit, exactly proportioned to the offence, and in such a manner as to awaken a desire of amendment. It is much easier, and seems safer, to say nothing; and so it goes on from bad to worse, till the end of our patience comes, and we either send away a girl who might have been a useful domestic, or have a scene, in which we are very likely to come off vanquished.

I once knew a lady, who was considered very successful in the management of her household. Her domestics were not perfect, but they usually stayed with her a long time, and were always strongly attached to her. I was anxious to know her secret, but could find only one peculiarity in her method. It was the almost excessive pains which she took to have a *right beginning*. As soon as a new girl came, she took her in training, taught her the exact way in which she wished the every day routine to be done, worked with her, pointed out all defects and mistakes, and the means of cure. It might seem an unnecessary waste of time, to devote so many hours and days and such strict attention, as my friend gave, to every new domestic; but she purchased by it months, and sometimes years, of comfort and ease. There was no room for doubt how she expected her work to be done, and more than all, in the very beginning of the new relation, while all was smooth and pleasant, that relation was fixed permanently as teacher and taught, head and hand. In other respects, I do not know that I should select my friend as a model mistress. She was kind hearted and just, but I am quite sure I have sometimes heard her scold! It was very dreadful and of course none of the lady readers of the *Agricul-*

turist do it, but after all, it will not matter so much, if we can contrive to be beloved and obeyed as she was. EMILY.

Windholme, Pa., March 8.



Apparatus for Carrying Fruit, &c.

We give herewith an engraving of what appears to us to be quite a valuable arrangement for carrying various kinds of tender fruits, which are liable to be bruised in transportation—not to mention eggs and other articles requiring special care in handling. It consists essentially of a square frame, like the base of a chair, within which is suspended the packing-box *A*, by means of the elastic India rubber straps, *C*, *C*, *C*. Nothing could be more simple in construction, and the inventor has wisely fixed the retail price at a low figure, depending upon large sales for a remunerative profit.

The specimen before us, from which the above drawing was made, cost $1 25. It is fifteen inches each way, measuring from the outside of the frame. Within the main box, *A*, are eight smaller neatly fitting fruit boxes, *D*, *D*, each capable of holding two quarts of berries, or sixteen quarts in all. For very tender, ripe fruit, these boxes might be divided across the middle, to give sixteen divisions, holding a quart each. The "Protectors" can be placed one above another in a car or wagon. The elastic suspending bands will prevent any sudden jarring, either vertically or sidewise. Two dozen of these, holding 384 quarts, would cost $30, or perhaps less at wholesale, without any extra expense for baskets, cans or boxes for the fruit, and they could be used year after year. A new set of rubber straps once in a few years, costing but a small sum, would be all the repair needed for a score of years. We speak thus strongly in their favor because we think them worthy the attention of those marketing the tender fruits, a vast amount of which is annually lost. They can be made of much larger size than the above, when desired. The inventor's card will be found in our advertising columns.

A Word for the Grape Vine.

If our readers followed the advice given in the *Agriculturist*, last Fall, they laid their grape vines on the ground, at the approach of Winter, and covered them with a little coarse litter or a few cedar boughs. And having done so, they will now have the satisfaction to find their vines unharmed by frost, and in full vigor and health, ready for their Spring work. But just here, let us give another word of counsel. *Don't take up your vines too soon!* By lying on the ground, especially if under the shelter of a high and tight fence, the buds will begin to start much earlier than if tied up to the trellis, and exposed to cold winds and freezing nights. If raised from the ground too soon, those tender buds will be in danger of blasting. Our advice is, therefore, that you gradually remove their Winter protection, early in this month, but keep the vines on the ground until cold weather has actually passed away. Then lift the canes carefully, taking pains not to break off any of the tender buds, and tie them securely to the bars or wires of the trellis. In this way—as we know from experience—you will be quite sure of an abundant and early crop of grapes.

The Sunflower.

We have had frequent inquiries as to the policy of cultivating the sunflower as a crop for oil, or pig, or chicken feeding on the farm; and occasionally seen a recommendation of it for these purposes. We have tried it to our own satisfaction, and under favorable circumstances, so far as the crop was concerned; cultivating in the same way as corn, with a result unfavorable to a second trial.

From the quantity of seed obtained from a single stalk, it may appear that the yield is large—forty bushels, or more to the acre. But when the *nutritive* amount of that seed is considered, the yield will be scarcely a third of the gross product. The kernel, or meat is soft, and oleaginous, inclosed in a thick husk of woody fibre, utterly worthless in nutritive properties, and taken into the stomach, has to be passed off as offal through the intestines. Indeed so coarse and chaffy is the husk that it is only fit for burning. Cattle, however, are fond of the leaves, and small branches of the stalk when green, and eat them with decided relish; but they, too, are so coarse and light in fibre that the same bulk of green corn stalks, and blades are worth double the sunflower. Pigs, and hens will eat the seeds, to be sure, but they prefer any sort of grain, and when all kinds are before them, the sunflower seed is the last they will touch.

Of its oil producing profit we know little, other than that it has several times been tried, and we presume, from hearing no continuous results, it proved a failure. In pressing, probably the open-grained, porous husk absorbed half the oil which the comparatively small kernel yielded. Yet, slight as the value of the leaf and seed may be for stock feeding, it is a noble, grand-looking plant, and should always have a place in the garden, and about the cultivated grounds of the premises. We love to look upon a vigorous well grown sunflower when in full maturity of growth, throwing its broad, glowing head-flower far above all else around it—and supported by its score of smaller sattelites below. Many people, since the choicer kinds of garden flowers have become so common, look upon the sunflower as vulgar, and not worth cultivation. As well might they discard the oak, or elm among shade trees because we have the mountain ash, and horse-chestnut.

We love to look at the great, broad sunflower in full bloom and glory, turning its morning face eastward to the rising sun, and following its course through the day along the Western firmament. It connects us with happy memories in childhood savors of an old-time home—associates us with a thousand domestic joys, innocence and peace.

Dearly do we love the sunflower! We always cultivate it in the garden; and although it may be ruled out of the catalogue of "choice plants," we cherish it none the less, but rather love it more that the dillettanti florists of the present day discard it. No. Although the sunflower, as a crop, may be worthless, as an ornament to the grounds—more particularly such as are not pretentious in keeping—it should always be planted, cared for, and admired. When past flowering, its leaves and small branches may be fed to the cow, and its seeds to the poultry.

Boys' and Girls' Own Clumns.

Molasses Candy.

A young reader in Glastenbury, Conn. (many pleasant remembrances of a Winter spent there in olden time arise at the mention of that good old town), desires us to "tell him, and others, how to make Molasses Candy, light, white, porous and delicious, such as is seen on the city candy stands." We are not very much skilled in this art, but a very good article can be made by taking a pint of good molasses, and stirring thoroughly into it a teaspoonful of finely pulverised bi-carbonate of soda (*i. e.* common cooking soda). Then put it on the stove in a large basin, and boil down, with frequent stirring at first, and constant stirring towards the last, until when a little of it is cooled, it becomes waxy. Then let it get nearly cold, when it must be worked and stretched or pulled for some time. A little butter or sweet lard on the hands will prevent its sticking. The whiteness, and lightness, or porosity, depends wholly upon the amount of working and stretching it receives, providing good common molasses be used, and not scorched. Common white sugar candy is simply white sugar melted in a little water, and then worked like wax for a long time. The maker takes a mass in his hands, draws it out, throws it over a hook, and draws it out further, then doubles the loop, and draws the two pieces, and so on until it becomes white and porous. He then lays it on a table before the fire, to keep it warm and waxy, and draws off from one end a round piece, several feet long, rolling it round upon the table. When these long pieces cool, they are broken up into the penny sticks sold in the shops. Perhaps we will tell you more about *how* different kinds of candy are manufactured. We will now only say, never eat colored candies. Pure white candy is nothing but white sugar, well "stretched."

Answers to Problems.

Prob 13.—Jno. R. Long, Logan Co, O, gives, 11.30027 feet as the true answer. This is correct, we believe, but differs only from that of La Fetra (page 28) by the small decimal fraction .00027.

Prob. 22.—From the following, correct answers to this were dated and post-marked, but not received, before our list was given on page 59: J. W. Quimby, Clinton Co, O; Canova Libhart Marrietta, Pa; Peter C. Waters, Gibson Co, Ind.; Robert Stobo, Essex Co, N. J.; "One of the Boys," Independence, Iowa; Chas. D. Morris, Tiskilwa, Ill; and Jno. D Smith, Des Moines, Iowa, nearly right. Waller W. Preston, Ringold Co, Iowa, sent also No. 23.

Prob. 25.—A gentleman gave to each of his sons a garden. John's garden was circular; James' was a rectangle or square. The ground was worth 3 cents per square foot, and the price of each garden in 3-cent coins just inclosed it—the coins being taken at 1-2 inch in diameter each. What was the size and value of each garden?

Answer.—John's garden—a circle, 96 feet in diameter, circumference, 301⅝ (301.5936).

Area, 7238⅛ (or 7238.2464) square feet. Value $217.15 (or $217.147342),

James' garden—a square, 96 feet each side. Area 9216 square feet. Value $276.48.

Answering thus: Sallie C. Clarke, Indiana Co, Pa; A, Le Fevre, New-Paltz, N Y; W. C., Burlington, N J; J. Vipond, Jo Davis, Co, Ill; Jno. F. Miles, Girard, Pa; Bernardo del Cowperthwaite and Monte B. Cowperthwaite King's Co, N Y; T. J. Adams, Elkhart Co, Ind; G. H. La Fetra, Oakland, O; C. M. Barber, Washington Co, O; H. B. Reist, Lancaster Co, Pa; Abr. Myers, Ogle Co, Ill; W. H. G., East New York, L I; W. W. D., Mass; John A. Bowden, St. Andrews, N Y; S. K. Verrill, East Poland, Me; Jno. W. English, Rhinehart, O; Irving E. Walker, Westboro', Mass; Ann E. Sexter, New London Co, Conn; Jas. E. Allen, Newport Co, R I; Jer. Markham, Newcastle Co, Del; Caleb Loweree, Wenkley Co, Tenn; Wm Huntley, Orange Co, N C; Robt. Eastham, Poinsett Co, Ark; Stephen Wright, Lawrence Co, Kansas; Amelia Raymond, Marengo Co, Ala,; Simon K. Wilson, Merrimac Co, N H; Sophronia King, Talbot Co, Geo; H. A, Kinsley, Ottawa Co, E Canada: also a good one from somewhere, dated Feb 16, with no name.... very nearly correct; Chas. E. Truesdale; Erie Co, Ohio; Jas. Simpson, Ill; Jno. Fleming, Somerset Co, N J. Other answers not correct.

Prob. 26.—A farmer in plowing a square field contain-

ing ten acres, went round the whole field, cutting a furrow ten inches wide, and continued thus until he finished at the centre. Question 1st—How many miles did he travel? Question 2d—How many "bouts" did he make?

This problem is interesting, and admits of several solutions. The word bout, to avoid confusion, we called once round the field, and the answers given are in accordance with this definition; but it might be proper to call these "rounds;" and name each turning at a corner, a "bout;" for at each of these points the plowman calls to his team to "come about." The first question may be solved thus: 10 acres equal 1600 square rods, or a single strip of land one rod wide and 1600 rods long. But a rod is 16½ feet and 16½ times 12 inches, or 198 inches wide, divided by 10, gives 19.8 furrows wide. Then the whole field is equivalent to one furrow 19.8 times 1600 rods long, or one furrow 31680 rods long. Dividing this by 320 rods in a mile, gives 99 miles travel, if we make no allowance for loss or gain at the corners; for it is evident, that we could begin at the centre and wind this long furrow around so as to just fill up the field.

Another way to solve it would be, to get the square root of the 1600 square rods, that is 40 rods for the sides of the square ten-acre field. Now there would be just 20 rods from each side to the centre, and in 20 rods there are 396 furrows, 10 inches wide. So when the plowman cuts 396 furrows off from each side of the field he would reach the centre—that is, 396 "rounds," or "bouts" round the field (or 1584 corner bouts), would plow it all. But the outside furrow is four times 40 rods, or 160 rods long, and the centre one 0, and the average length of the fur rows is 80 rods. 396 rounds of 80 rods each, equals 31680 rods, or 99 miles travel.

There are still several difficulties. When the plow goes to the corner, does it go clear out to *finish* its furrow before stopping, or does it stop 10 inches back, to turn around and begin the next furrow 10 inches from its outer edge? If it does the latter, then there is a saving of 10 inches at each corner, or 40 inches in each round, equal to just ¼ of a mile in making 396 rounds....If on the contrary, the plow runs clear out at each corner, it must be pulled back 10 inches to start the next furrow, and here is a loss (backward travel—hard on the backs of weak plowmen), equal to ¼-mile in 396 rounds.

Again, when 395 rounds are made, there is left a piece unplowed, 20 inches square. Now, one furrow out and one back—that is, two side furrows, will finish this, requiring 1582, instead of 1584 corner bouts. Or the plow may cut off one-half of the plot, leaviag a strip 20 inches long and 10 inches wide; turning a quarter round, it cut 10 inches of this off, and then anotner quarter round finished it, leaving nothing to require a last corner bout. This would give 1583 corner bouts. Both of the points respecting the finishing of the piece, were referred to by "Sallie," of Indiana Co, Pa, who gave clear solutions of this, and a pretty figure for the preceding problem. Nathan Blakeslee, of Oakland Co, Mich, made the last round a three-quarters one, or 1583 corner bouts.

The following answered, 99 miles and 396 bouts: Jno. Souter, Butler Co, O; Jos. W. Anderson, York Co, Pa; W. W. D., Mass; Jno. A. Bowden, St. Andrews, N. Y; Jacob D. Shank, Clinton Co, O; Wm. H. Munroe, Armstrong Co, Pa; Wilson Stuart, Washington Co, Pa; John Fleming, Somerset Co, N. J; Joseph H. Simpson, Ill; E. H. Gilbert, Washington Co, N. Y; Mont. B. Cowperthwait, Kings Co, N. Y; Joseph Vipond, Jo Davies Co, Ill; John F. Miles, Girard, Pa; J. W. English Rhinehart, O; Irving E. Walker, Westboro, Mass; S. Johnson, Keene Co, N. H; J. Martin, Jefferson Co, N. Y; P. L. Donald, De Soto Co, Miss; T. M. Kirkby, Cecil Co, Md; Sarah L. Tudor, Rappahannock Co. Va; Harriet Clarke, Manitowoc Co, Wis; J. S. Rapalje, Hennepin Co, Min; Benj. Imlay, Yadkin Co, N. C; R. R. Simpson, Scott Co, Iowa: Joshua A. Manniere, Lamoille Co, Vt; Archibald Ransom, Niagara Co, N. Y.....Abr. Meyers, Ogle Co, Ill, (99 miles and 1 ft, 391 bouts); Peter A. Le Fevre, New Platz, N. Y. (990 m, 396 bouts); S. K. Verrill, E. Poland, Me, (99¼ m, 396 bouts); R. W. C., Burlington Co, N. J, (98 ¼ m. 395 bouts. (The other replies differed so far from the rght answers that we do not note them.

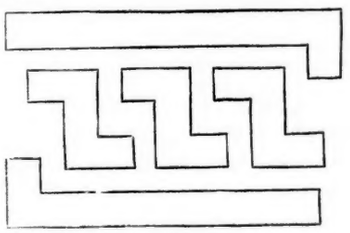
Probs. 27 and 28 have been largely answered, (47 correct answers already to 28), but as stated last month, these will be attended to in May.

New Problems.

We get many of these, but can publish only a small part of them. We thought we would print no more enigmas, but so many grown up people, as well as boys and girls write requesting this kind of problems, that we have concluded to, now and then, select a good one; so our young friends may send in their contributions when they an make up something extra of this kind. A good many send old problems; we hope every boy and girl who sends one will always tell us whether it it is new or old. A good thing is not to be despised because it is old. Don't forget our request that the answer to each problem be put on a separate slip of paper, if two or more come in the same letter, and put on each your name, post office, *County* and State. We only print the County and State, for should we give your P. O., there are a lot of dealers in lottery tickets and gift enterprizes and various humbugs, who are constantly on the lookout for names, and ten chances to one you would be flooded with their vile trash, if they could find your address in this or any other paper. We have frequently been offered large sums to furnish a list of the names on our mail books, under the specious pretense that they were wanted for legitimate advertising purposes, but such a list will never be furnished.

We only give one new problem now which with 27 and 28 will make three to be answered next month.

PROB. 29.—Sent by H. B. Reist, Lancaster Co., Pa. (not original). To arrange the following five pieces into a perfect *cross*.



A Scriptural Sum.

Here is a sum in addition for you to work out. It will require diligence and care, and admit of no wasted time:

Add to your faith .....virtue;
Add to your virtue.....knowledge;
Add to knowledge.....temperance;
Add to temperance .....patience;
Add to patience.....godliness;
Add to godliness.....brotherly kindness;
Add to brotherly kindness.....charity.

The Answer—"For if these things be in you and abound they make you that ye shall neither be barren nor unfruitful in the knowledge of our Lord Jesus Christ."—2d Peter, i: 5-8.—*Christian Index.*

The Warning Bell.

(Here is a beautiful waif which we find in the "Drawer." We have never known when or by whom it was written Our young readers have all heard this monitor speak within They will be wise if they heed its warnings.)

In every youthful breast doth dwell
A little tingling, jingling bell,
Which rings if we do ill, or well.
And when we put bad thoughts to flight,
And choose to do the good and right,
It sings a pœan of delight.
But if we choose to do the wrong,
And 'gainst the weak strive with the strong,
It tolls a solemn, saddened song.
And should we on some darksome day,
When hope lights not the cheerless way,
Far from the path of duty stray,
'Twill with its tones serene and clear,
Of warning in the spirit's ear,
Our slow returning footsteps cheer.
And always in the worldly mart,
With its sweet song it cheers each heart,
To do with energy their part.
Then let us strive with main and might,
To shun the wrong and do the right,
And the bell's warning song ne'er slight.

CONSCIENCE

New Books.

There have been comparatively few valuable new books issued since the "hard times" came on. We have, however, half-a-dozen or so which we think worthy of a more careful reading and notice than the business season has allowed of. (We never give a list of guess-work "notices" merely to please publishers and get our library filled gratuitously).....The "Illustrated PEAR CULTURIST is a very beautiful volume, containing sundry directions for planting, budding, grafting, pruning, training and dwarfing the Pear Tree, as also propagation, gathering, ripening of fruit, &c. It is distinguished mainly, however, as the first American work giving *colored plates* of a large number of the most highly esteemed dwarf and standard pears. There are few or no prettier or more ornamental volumes of the kind for the table or library of the lovers of rural life. It was got up more for the love of the subject than for profit. The Editor witholds his name—a hint we suppose for us to do the same. Published by Starr & Co., New London, Ct., and A. O. Moore, New-York. Price $6.....HEDGES AND EVERGREENS is the title of a new work just published by A. O. Moore, from the pen of Dr. J. A. Warder of Cincinati, which name is sufficient to commend it to the attention of all interested in the subjects of which it treats—and who is not? especially the part relating to evergreens. The book contains much useful information respecting various hedge-plants; we are not prepared, however, to agree with one statement of Dr. W, viz: "That the OSAGE ORANGE (*maclura aurantiaca*) IS THE HEDGE-PLANT for the United States may be fearlessly asserted." The information on evergreens is quite full, and the book contains numerous plates and smaller illustrations. 290 pages; price $1.....RURAL AFFAIRS, by Jno. J. Thomas, L. Tucker & Son publishers, is announced at length in our advertising columns. We have not yet seen a copy, but it is doubtless a valuable work.

OUR BASKET

Into which are thrown all sorts of paragraphs—such as NOTES *and* REPLIES *to* CORRESPONDENTS, *with Useful or Interesting Extracts from their Letters, together with Gleanings of various kinds from various sources.*

To Correspondents.—By another month we *hope* to nearly clear our table of the mass of unanswered letters still on hand, calling for individual as well as general replies.

Complimentary Letters.—Such kind words and *acts* of appreciation as are in a letter before us from Mr. L. Hariman of Madison Co, Indiana, and in hundreds of other letters of a similar character, are well worth laboring for. It is natural to any heart to love approval. We seldom venture, however, to indulge our vanity so far as to *print* such letters, unless some general good end will be thus secured. But, they are none the less gratefully received because not printed or individually responded to.

American Cattle.—The chapter in type for this month is laid over—waiting for some *illustrations*.

Pears—Corn—Oats—&c.—H. Young, Owego Co., N. Y., and numerous other enquirers, will find the articles they ask about all advertised in the March or April *Agriculturist*. The White Poland oats are sold now at $1,25 per bushel, though we have found none this year quite up, in quality and weight, to the samples we distributed last year. The wet Autumn was unfavorable to their ripening bright and plump.

Prince Albert Potatoes.—A number of inquiries are made for these. The few persons in the country who have them for sale should advertise the fact and they would find a ready market at fair prices.

Burr's New Pine a Pistillate.—J. G. Marchant of Adams Co, Ill., in alluding to Burr's New Pine strawberry, says it is catalogued by Nurserymen there, as a *staminate* or perfect plant, whereas, in our list, page 208, Vol. XVI, it is called a pistillate, or imperfect variety. A casual examination of the blossoms as they open in the Spring will prove our correctness in this particular.

Turneps.—J. P 's acceptable communication marked for insertion at the turnip planting season.

Of that Big Corn Crop, in Indiana, referred to on page 283 of December *Agriculturist*, Mr. L. A. Hale, of Sussex Co., Del., and one or two others inquire: What was the kind and depth of the soil, the depth and manner of working, draining, manuring, planting, distance of hills or drills, number of hoeings, &c. Who will answer?

Trees on Hilly Ground.—W. H. Young, Suffolk Co, L. I. On your gravelly hill, probably the chestnut would flourish, though we cannot decide as well as if we had seen the soil. Locust trees would furnish more valuable timber, and might succeed well, especially around the base of the hill.

A Flower in Winter.—On Jan. 25, W. H. Young of Orient, L. I., forwarded us a full blown flower of the Garden violet (Pansy, or Heart's Ease) that day picked from the open ground.

More Pumpkins still.—J. Kenyon writing from Henry Co., Iowa says he raised last year, in Ohio, a pumpkin weighing 184 lbs., and another whose girth was seven feet and nine inches?....Can't we get any of the seeds of these various big pumpkins we so often hear of, to distribute among others? We have often tried and as often failed.—ED.]

Patent Office Report and Seeds.—G. W. Lincoln, of Henry Co., Ill., writes: "....I for one endorse all you say of the Agricultural Department at Washington, which needs a thorough overhauling....I have a copy of the Patent Office Report and am honest in saying that I would prefer any one number of the *Agriculturist* for its *practical* information to the entire Patent Offie volume....I have had seeds through our representative, but they proved to be of little account....You men of influence should undermine the heap of foulness at Washington.... [This is a sample of many letters received by us.—ED.]

The Seed Distribution—Note to all Subscribers.

All applications for seeds to this date have been responded to, by forwarding the seeds asked. A few mistakes have undoubtedly occurred in assorting so many envelopes, and putting into them so great a variety. We shall cheerfully rectify any errors. Not far from **100,000** separate parcels of seed have already been sent out by us, and at least a thousand packages are still daily called for. The distribution will be continued until all subscribers are supplied.

☞ We expect some kinds will soon run short, and we therefore request those applying for seeds hereafter, to put upon the *bottom* of the envelope two or three extra numbers, indicating what sorts would be preferred should we chance to be out of one or more of those first named upon the *upper* left-hand corner of the envelop.

☞ **The actual circulation of the Agriculturist to regular subscribers, is believed to be much larger than that of any other Agricultural or Horticultural Journal in the world.**

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The subscribers, in soliciting the attention of *dealers* and *planters* of trees to their stock, now ready for the ensuing spring's trade, beg leave to say that it embraces everything in their line of business, all of the most vigorous growth and best quality.

THE DEPARTMENT OF FRUIT TREES

contains a full collection of Apples and Pears, both standards and dwarfs; Cherries, standards and on Mahaleb stock; Plums, Peaches, Apricots, Quinces, Almonds, and miscellaneous fruits, such as Walnuts, Filberts, Chestnuts, &c. Also, Grape-vines (both hardy native and foreign varieties for vineries), Gooseberries (best English varieties), Currants, do., Raspberries, Blackberries (New-Rochelle or Lawton, High Bush or Dorchester, Newman's Thornless, &c.), Strawberries, &c. Rhubarb and Asparagus roots of the best varieties.

The long experience of A. Saul in these matters, which occupies his whole attention, enables us to guarantee the correctness of all articles sold by us.

THE ORNAMENTAL DEPARTMENT

embraces a complete stock of all kinds of *Deciduous* and *Evergreen Trees* and *Flowering Shrubs*, &c.; including a large stock of Norway Spruce, American Spruce, Balsam Fir, European Silver Fir, Austrian and Scotch Pines, American Arbor-vitæ, Junipers, Yews, &c., together with the newer and rarer Conifers, &c.; also, Maples, Elms and Oaks, in six varieties of each; American and European Lindens, Ash, Mountain Ash, Horse-Chestnut, Larch, Sycamore, Magnolia, Chestnut, Beech, Birch, Cypress, Acacia, Locust, Tulip Tree, Kentucky Coffee, Poplar, Willows, &c.

Flowering Shrubs, several varieties of Spiræa, Althæas, Tartarian Honeysuckles, Euonymus, Europæus, Syringe, Lilacs, Flowering Hawthorns, Weigelia, Forsythia, Tamarix, Deutzias, Dogwood, Buffalo Berry, &c. A large collection of Climbing Plants, Climbing Roses, and Roses of all classes in great variety; Dahlias, Peonies, Phloxes, Chrysanthemums, and a full collection of Herbaceous Plants and Bedding-out Plants, such as Petunias, Verbenas, Lantanas, Geraniums, Heliotrope, Fuchsias, &c.

Buckthorns, Hawthorns, Osage Orange and Privet for Hedges and Arbor vitæ for Screens, &c.

20,000 plants and cuttings of Salix triandra and Salix purpurea the two best Osier Willows in cultivation, as well as other varieties.

A Descriptive Catalogue of prices will be sent to all applicants on inclosing a three cent P. O. stamp to prepay the same.

A. SAUL & CO.,
Proprietors.

TREES FOR THE CENTRAL PARK.

In pursuance of a resolution of the 16th March, 1858, the Board of Commissioners of the Central Park, hereby solicit proposals for supplying trees and plants for the Park, according to a schedule to be had on application to the clerk at the office of the Board, Room 10 Bank of Commerce Buildings.

By order of the Board,
JAMES HOGG, CHARLES W. ELLIOTT, JOHN A. C GRAY, } Committee on Trees and Plants.
DAVID H. HART, Clerk.
Dated New-York, March 17, 1858.

HEDGES AND EVERGREENS.

A new work, showing how to produce a PERFECT HEDGE. A successful system of pruning—descriptions and engravings of plants to be used in the United States; with directions for CULTIVATING & TRANSPLANTING EVERGREENS Catalogue of different varieties, beautifully Illustrated.

PRICE ONE DOLLAR—POSTAGE PAID.

Address A. O. MOORE,
Agricultural Book Publisher, 140 Fulton-st., New-York.

HARDY NATIVE EVERGREENS,

JOHN W. ADAMS, Portland, Maine, will send post-paid his new Catalogue to all who send a stamp

WM. R. PRINCE & CO., LINNÆAN GARDENS AND NURSERIES, Flushing, near New-York.

PRICED CATALOGUES, which are sent to purchasers of Trees, who inclose stamps.—No. 1, Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs and Plants No. 2, Roses, Carnations, Chrysanthemums, Phlox, Iris, Double Sweet Williams, and all other Herbaceous Flowering Plants, &c. No. 3, Extra large Fruit Trees. Evergreens, and other Ornamental Trees and Shrubs, suitable for immediate fruit-bearing and embellishment. No. 4, Wholesale Catalogue for Nurseries and Dealers, comprising Trees, Shrubs, Plants, Bulbous Flower Roots, Stocks, for Engrafting, and Tree and Shrub Seeds, &c. No. 5, Wholesale Catalogue of Vegetable, Agricultural, and Flower Seeds. No. 6, Descriptive Catalogue of our Unrivaled Collection of 100 Select Varieties of Strawberries, with a REJECTED LIST. No. 9, Catalogue of Bulbous Flowers of every Class, including Tree and Herbaceous Pæonies, Dahlias, and other rare Flowering Plants. No. 11, Treatise on Culture of the Chinese Potato or DIOSCOREA BATATAS, on Licorice, Tanner's Sumach, Fig, Almond, Olive, Osier, Chinese Sugar Cane, Earth Almond, and Madder. No. 12, Wm. R. Prince's Address to the American Institute, on the character and merits of the Chinese Potato, with the Triumphant Reports of the American and French Institutes on the same subject. No. 13, Catalogue of Greenhouse Plants.

LARGE FRUIT TREES. Standard and Dwarf Pears, Apples, Cherries, and other Fruit Trees, for immediate bearing. Large Evergreens and other Ornamental Trees. New-Rochelle, Imperial and Dorchester, Blackberries, $10 per 100, $90 per 1,000. Chinese Potato tubers, $5 per 100. Superior Strawberries, $5, to $8. per 1,000. Raspberries, $35 to $70 per 1,000.

GRAPES, Rebecca, Delaware, Oronoke, Carter, Union Village, and all other new varieties.

WM. R. PRINCE & CO. Flushing, N. Y.

New-Canaan Nurseries.

The subscribers would invite attention to their Nursery stock, consisting of

100,000 Apple trees from 2 to 5 years from the bud or graft:
40,000 Peach trees, 1 year from the bud:
20,000 " 2 years "

Pear trees, Standard and Dwarf, Cherry, Apricot and Quince trees. Also 20,000 American Arbor Vitæ from three to five feet high (twice transplanted), Norway Spruce and other Ornamental trees. Address

STEPHEN HOYT & CO.,
New-Canaan, Jan. 20, 1858. New-Canaan, Ct.

NOTICE TO ORCHARDISTS.

25,000 PEACH TREES, ONE YEAR FROM THE BUD, OF STRONG GROWTH.

Being always engaged in the culture of the fruit for market, purchasers may rely upon obtaining the varieties best adapted to their interest

20,000 Osage Orange plants, 2 years growth, twice cut back and root pruned. ASHER HANCE & SON,
Rumsom Nurseries, near Red Bank,
Monmouth Co., N. J.

Pear Seeds and Seedlings.

Good healthy pear seedlings, 1 year $8 per 1,000, $75 per 10,000.
Do. do. do. 2 years $15 per 1,000, $140 per 10,000.
New-England Pear Seeds of prime quality for Spring sowing $5 per quart.

Norway Spruce, Scotch Larch and Fir, Pines, &c., Apple, Mazzard, Plum, Angers, Quince, Mahaleb, Paradise and Donein, stocks of the best quality. Catalogues to any address. Carriage paid to New-York or Boston.

B. M. WATSON, Old Colony Nurseries,
Plymouth, Mass.

CARRYING FRUITS TO MARKET SAFELY.

PATENT TRANSPORTATION PROTECTOR.

The bruised and unwholesome state, and consequent unsaleableness of tender fruits from want of sufficient care in their transportation is well known.

The Protector is designed for the safe conveyance of peaches, plums, strawberries, blackberries, eggs, or anything that requires more than ordinary care. Specimens may be seen at

R. L. ALLEN'S, No. 191 Water-st., New-York.

Orders for Protectors of larger size than the specimens will be executed, but the heavier the package the more rigid must be the springs. Orders left with R. L. ALLEN, as above will be promptly executed. HENRY B. OSGOOD, Inventor and Manufacturer. Whitinsville, Worcester Co., Mass.

CHERRY CURRANTS.

The undersigned would call the attention of all fruit growers and dealers to h is fine stock of

THE GENUINE CHERRY CURRANT

for sale at $15 per hundred, selected one year old plants.
$10 per hundred fine well rooted plants of 2d size.

Specimens of the fruit grown by the undersigned, were exhibited last Summer at the Farmers Club, and Taylor's Saloon, New-York, where they attracted marked attention. See AGRICULTURIST for 1857, page 184.

CHARLES F. ERHARD.
Ravenswood, L. I.

STRAWBERRY PLANTS.

250,000 Hoveys Seedlings.
100,000 Boston Pines.
100,000 Crimson Cones.
25,000 McAvoys Superior.

All of which have been raised with great care. Pure and unmixed, and in fine condition. Will be Sold in quantities to suit purchasers at the following rates, viz:

From	100	to	1,000	$10	per Thousand.
do	1,000	to	5,000	$5	do do
do	5,000	to	10,000	$4 50	do do.
do	10,000	and upwards		$3 75	do do.

An extra charge made for Packing.

Apply at the Gardens of the undersigned at Yonkers, or at their office in New-York.

WELLS & PROVOST. (Proprietors of Spratts Patent Self-Sealing Cans.) Nos. 215 & 217 Front-St., New-York.

STRAWBERRY PLANTS.—I CAN FURnish from my fruit Garden, fine vigorous plants of all the most desirable varieties, including McAVOYS *Superior*, LONGWORTH'S *Prolific*, HOVEY'S, WILSON'S, GENESEE AND WALKERS *Seedlings Moyamensing*, *Brighton* and *Boston Pines*, BURRS *New Pine*. *Extra Red*, *Iowa* and *Early Scarlet*.

Also RED AND WHITE ANTWERP RASPBERRIES.

I. M. WARD, Newark, New-Jersey.

PIANOS! elegant 6¼ oct. rosewood Pianos new and perfect for $150. JAS. M. EDNEY, 56 John-st. NY.

DORCHESTER BLACKBERRIES.

HOVEY & CO., 7 Merchants' Row, Boston, offer for sale 5,000 Dorchester Blackberry.

This very superior berry has not received the attention its merits deserved. In competition with the Lawton, it has carried off every prize before the Massachusetts Horticultural Society the last two years.

The Committee state in their annual report for 1857,

"That in each and every instance where they questioned the contributors for the purpose of learning their individual opinions of the merits of the one or the other variety for market, there was not a single dissenting voice as to the superiority of the Dorchester over the Lawton. The Dorchester is of superior flavor; the berry is much larger, is equally hardy, and fully as prolific, bearing carriage well, and retaining its black lustral color."

Strong plants will be sold as follows; 100 for $10, 50 for $6, 25 for $3 50, 12 for $2.

NEW-ROCHELLE (OR LAWTON)

BLACKBERRY PLANTS.

PRICES REDUCED!

The Subscribers announce to their friends and customers that they have now

OVER SIX ACRES
of the
GENUINE NEW-ROCHELLE (OR LAWTON)
BLACKBERRY PLANTS

under cultivation, and in good condition.

They are therefore prepared to fill large orders the coming FALL and the next SPRING, at the following reduced prices:

One Thousand Plants	$100
One Hundred Plants	12
Fifty Plants	6 50
Two Dozen Plants	4
One Dozen Plants	2 50
One Half Dozen Plants	1 50

☞ Good Plants for setting, of a second size, will be sold for $80 per 1,000 Plants, or $10 per 100 Plants.

N. B.—All Plants ordered of us will be TAKEN up and PACKED with the GREATEST CARE, and UNDER OUR OWN PERSONAL SUPERVISION.

Of the MANY THOUSANDS sent out by us last year, we have heard very few instances of failure, notwithstanding that they have been forwarded to

EVERY PART OF THE COUNTRY,

and the setting out has often been entrusted to unskillful hands.

Printed directions for setting and cultivating are sent with every package.

GEORGE SEYMOUR & CO.,
South Norwalk, Conn.

N. B.—DREW & FRENCH, 85 Barclay-street, New-York City, are our authorized agents for the sale of these plants, from whom they can be obtained of same quality and at same price as of ourselves.

Mr. JAMES M. PRICE, Wellingford Nursery, Oakdale Post Office, Delaware Co., Pa., is our Agent for Philadelphia and the neighboring country. GEO. SEYMOUR & CO.

The Lawton Blackberry

Is unique, and not, as some have been led to believe, the common "NEW ROCHELLE BLACKBERRY," improved by cultivation. It differs in shape, size and quality from all others. Is perfectly hardy, enduring the severest winters without protection. The fruit is delicious, having small seeds in proportion to its size, is a prodigious bearer, and in good soil, in any locality, the stalk, leaf, flower and fruit, will grow of mammoth proportions.

This variety only is cultivated by the undersigned for sale, and for the convenience of Clubs, and those who take orders for plants. They will be safely packed in boxes, put up in clusters of one dozen, without charge for package, at the following scale of prices:—A box of 1 dozen, $2; a box of 2 dozen, $3; a box of 5 dozen, $10; a box of 8 dozen, $15; a box of 12 dozen, $20; a box of 40 dozen, $50. By purchasing in original package, the genuine variety will be secured beyond a doubt, and purchasers may expect a fair crop of delicious fruit the second summer. The money should accompany the order, with name and address distinctly written.

Address WILLIAM LAWTON,
No. 54 Wall-street, New-York.

NEW-ROCHELLE OR LAWTON BLACKBERRY PLANTS.

This famous fruit was discovered and cultivated nearly twenty years ago, at New-Rochelle, N. Y., by Lewis A. Secor, from whom Lawton, Seymour and others obtained their original stock. Our pamphlet of 24 pages giving its entire history (name included) with directions for culture, will be forwarded post-paid on receipt of six cents in postage stamps.

Our Prices are reduced to the following rates.

FIRST SIZE, LARGE AND VIGOROUS.

One Thousand Plants	$100,00	Two Dozen Plants.	$4,00
One Hundred Plants	12,00	One Dozen Plants.	2,50
Fifty Plants	6,50	One half Dozen Plants	1,50

Second size Plants, $80,00 per 1,000.

We give the fullest guarantee of the genuineness and good condition of all plants sold by us.

DREW & FRENCH, 85 Barclay St.
New-York, March, 1858.

New-Rochelle Blackberry.

Vigorous shoots from the above at $10 per 100. $6 per 50. $4 per 25. $2 50 per dozen.

Transplanted plants of the same at $15 per 100. $8 per 50—$5 per 25—$3 per dozen. Hop trees at $1 each or $50 per 100.

P. C. ROOSEVELT, Pelham, Westchester Co., N. Y.

NEW ROCHELLE (OR LAWTON) BLACKberry. Genuine plants for sale by the 100 or 1,000 at the lowest rates. By SIMEON LESTER, New-Rochelle, N. Y. Or apply to JOS. W. LESTER, 166 Water St., New-York City

The Lawton Blackberry.

Plants in original Packages from Mr. Lawton's Farm in New-Rochelle, for sale at same prices as Mr. Lawton.

R. L. ALLEN. 191 Water-st., New-York.

Raspberries—Strawberries—Rhubarb.

BLACKBERRIES—CURRANTS, &c.—a choice assortment including

Brinkles Orange Raspberry.

A new variety, unequalled in flavor and beauty—also very vigorous and productive—is considered by many as the very best, also the THUNDERER—CUSHING—AND COL. WILDER—and

Myatts Linnæus Rhubarb.

An English variety—particularly tender, fine flavored and productive—Chas. Downing Esq., states it to be the best kind for Market or Garden. See his article in HORTICULTURIST, last August. Also

Strawberries.

HOVEYS Seedling—Boston Pine—Large Early Scarlet—PEABODY'S New Seedling.

BLACKBERRIES—New-Rochelle and NEWMAN'S Thornless—Black Naples Currants, &c

The above plants are offered to the trade, Market Gardeners and others, wholesale and retail. Priced Catalogues furnished on application. FREEMAN & KENDALL.
Ravenswood Fruit Garden—Ravenswood, L. I

We have visited Messrs. Freeman & Kendall's Fruit Gardens from which they are now offering to sell plants, and we can say their Plants are well grown and very superior varieties. The Orange Raspberry and Linnæus Rhubarb particularly. We take pleasure in recommending them to the public.

Charles Downing, Newburg
C. W. Grant, Iona, near Peekskill.

The Allen Raspberry.

Our spare stock of this approved, tried, and *thoroughly hardy* fruit will be ready for filling orders as soon as the grounds is free from frost. Its superiority is now so well established, that several distant Raspberry growers, after a satisfactory trial, with a few plants, have taken five hundred, to a thousand each for their own cultivation. Descriptions of the fruit and the mode of cultivation will be sent to all applicants, and with every package.

Prices: 10 plants $1. 2 dozen plants and upwards, $1 per dozen. 100 plants, $7 per 100.

Orders, enclosing money, may be addressed to the subscriber, care of Lewis F. Allen Esq., Black Rock, N. Y.

March, 1858. THOMAS DUFF.

PURE ANTWERP RASPBERRIES.

The GENUINE IMPORTED RED ANTWERP RASPBERRY, for sale in lots to suit purchasers, from one dozen to twenty thousand. Terms Cash.

Selected Plants, $1. per dozen. Selected Plants, $3 to $5, per hundred. Canes 2 feet to 6 feet, $20, per thousand. Would trade for Peach and Pear Trees or Grape Vines.

E. S. WOOLSEY, Milton, Ulster Co., N. Y.

10,000 PLANTS OF THE NEW French Double bearing Raspberry, the most prolific and hardy of all Raspberries—also 10,000 of the true Red Antwerp, for sale at the low price of $5 per hundred, $40 per 1,000, no charge for packing or boxes, and delivered free to the express office in New-York. Address F. D. TUKE.
Bedford, Westchester Co., N. Y.

Isabella and Catawba Grapevines.

Of proper age for forming vineyards, cultivated from, and containing all the good qualities which the most improved cultivation for over eighteen years has conferred on the Croton Point Vineyards, are offered to the public. Those who may purchase will receive such instructions for four years, as will enable them to cultivate the Grape with entire success, provided their locality is not too far north.

All communications addressed to R. T. UNDERHILL, M. D., New-York, or Croton Point, Westchester Co., N. Y., will receive attention.

The past season, though the coolest and most unfavorable for grape maturing we have had in twenty years, he ripened his whole crop,—proving his Isabellas and Catawbas have become perfectly acclimated. This gives him full assurance that by improved cultivation, pruning, &c., a crop of good fruit can be obtained EVERY YEAR, in most of the Northern, all of the Middle, Western and Southern States.

N. B. To those who take sufficient to plant six acres, as he directs, he will, when they commence bearing, furnish the owner with one of his Vinedressers, whom he has instructed in his mode of cultivation, and he will do all the labor of the vineyard, and insure the most perfect success. The only charge, a reasonable compensation for the labor. When the purchase is large and approved paper or other security can be given, a liberal credit on most of the purchase will be given.

Also, APPLE-QUINCE TREES. (which are sometimes called the Orange Quince,) for sale as above. R. T. U.

REBECCA, CONCORD, DIANA, AND OTHER AMERICAN GRAPES.

HOVEY & CO.

Offer for sale a fine stock of these superior hardy Native Grapes, whose qualities have been fully proved.

Strong vines of the Rebecca, $24 per dozen.
Smaller size do 12 do

Also, the CARTER, UNION VILLAGE, DELAWARE, NORTHERN MUSCADINE, &c.

All the choicest Foreign Grapes, cultivated in pots, and suitable for graperies.

Catalogues of Trees, Plants, Seeds, &c., sent to all applicants inclosing a postage stamp. Address.

HOVEY & CO.,
7 Merchants' Row, Boston

GRAPE VINES—5,000 ISABELLA AND Catawba Grape Vines, two-year-old, for sale by
SIDNEY E. VAN WYCK,
Fishkill, Dutchess Co., N. Y.

GRAPE VINES AND PEACH TREES grown in Monmouth County, N J. 5,000 Isabella and Catawba, two-year-old Grape Vines of superior quality; also 10,000 Peach Trees of grafted fruit for sale by GEO. W ATWOOD, 16 Cedar-st., New-York.

LINNÆUS RHUBARB.

BRINKLE'S ORANGE, FASTOLF AND HUDSON RIVER ANTWERP RASPBERRIES.

Newman's Thornless and Lawton Blackberry Plants, &c., &c.

The subscriber offers for sale a large stock of Rhubarb, Raspberry and Blackberry Plants, at the following low prices, viz:

	per dozen.	per 100.	per 1,000
Linnæus Rhubarb	$2 00	$8 00	$50 00
Brinkle's Orange Raspberry	2 00.	12 00	100 00
Fastolf Raspberry	1 00.	4 00	30 00
*Hudson River Antwerp	do. (red) 75	2 00	18 00
White Antwerp Raspberry	2 00.	8 00	130 00
Newman's Thornless Blackberry	2 50.	15 00	120 00
Lawton (New-Rochelle) Blackberry	3 00,	16 00	130 00

*This variety is extensively cultivated on the banks of the Hudson River for Market; and produces yearly $200 to $300 worth of fruit per acre.

Also, Fruit and Ornamental Trees, Flowering Shrubs, Vines, Fruit Tree Stocks, Ornamental Tree and Shrub Seedlings, &c., &c., at moderate prices, wholesale and retail.

Catalogues furnished gratis on application.

GEO. D. KIMBER
Nurseryman, Flushing, L. I.

4th mo. 1st, 1858.

Rhubarb Roots.

JUST RECEIVED from Europe
MYATT'S VICTORIA RHUBARB ROOTS.
LINNÆUS RHUBARB ROOTS.
ASH LEAF KIDNEY POTATOES.
For sale by R. L. ALLEN, 191 Water-st., New-York.

LINNÆUS RHUBARB.

To MARKET GARDENERS & NURSERYMEN. We offer very low. FREEMAN & KENDALL,
Ravenswood Fruit Garden—Ravenswood, L. I.

RUSSIA OR BASS MATS, selected expressly for budding and tying. GUNNY BAGS, TWINES, &c., suitable for Nursery purposes, for sale in lots to suit, by D. W. MANWARING, Importer.
243 Front-street, New-York.

Thoroughbred Short Horns,

FOR SALE.

I offer for sale three young Short Horn Bull's, all bred by Col. I. M. Sherwood, from his imported stock. Also several females of the same stock. Having sold most of my farm. I will sell these animals at prices suited to the condition of the times. For particulars address the undersigned at Brook Farm, Auburn, N. Y. CHAS. P. WOOD.

IMPROVED BERKSHIRE PIGS FOR sale by JOHN B. EDGAR.
Rahway, New-Jersey.

SUFFOLK PIGS.

The undersigned has for sale choice Suffolk Pigs at fair prices EDWIN MARSHALL.
Poughkeepsie, N. Y.

PERUVIAN GUANO—BONE DUST—Superphosphate of Lime—Poudrette—Land Plaster—warranted of best quality. For Sale by R. L. ALLEN.
191 Water-St., New-York.

No. 1. Peruvian Guano.

GROUND BONE.
SUPERPHOSPHATE OF LIME.
LAND PLASTER, CHARCOAL DUST.
POUDRETTE, of the Lodi Manufacturing Co.
Send your orders early to the North River Agricultural Warehouse. GRIFFING BROTHER & CO.
60 Cortland St., New-York City.

To Farmers and Gardeners.

THE LODI MANUFACTURING CO. offer 70,000 barrels of their new Improved Poudrette for sale the coming season. It is now well known as the best for Ruzer in market for Indian Corn and kitchen gardens—is perfectly harmless when applied next to the plant, and yet quick and powerful in its effect. A pamphlet with instructions for its use, certificates, &c., will be forwarded, free of cost, to any person sending their address. The L. M. Co. have a capital of $100,000 invested in this business, and a reputation of 17 years to keep up—this is *some* guarantee for a good article. Price as usual, $1 50 per barrel for any quantity over 6 bbls.; 1 bbl. $2 00; 3 bbls $5 00; 6 bbls. $9 50; free of carriage or other expense. Address
THE LODI MANUFACTURING CO.,
60 Cortland-st., New-York.

Fish Guano.—$35 Per Ton.

The attention of Farmers and others is called to the Fish Guano, Manufactured at the

LONG ISLAND FISH GUANO and OIL WORKS,

at Southold, Long Island. It is composed of the FLESH and BONES of Fish, after extracting the oil and water, and has been thoroughly tested in England and France, and from testimonials received, is found to be equal to Peruvian Guano, and other manures—is free from smell and not injurious to health,—Price in bags $35 per ton. Pamphlets containing full particulars and testimonials may be had on application to
BRUNDRED & ROGERS, 60 Pine St., New-York.

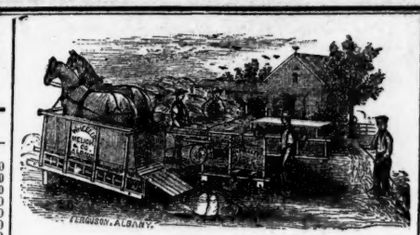
Bone Manure.

SAWINGS, TURNINGS AND CRUSHED BONES FOR Sale by the Manufacturers in large or small quantities.
A. LISTER & CO.,
Tarrytown,
Westchester Co., N. Y.

FARMERS AND GARDENERS SENDing their P. O. Address to us will receive by mail *gratis* an Almanac for 1858, and information concerning the CELEBRATED MANURES made by "The Lodi Manufacturing Co., 60 Courtland St., New-York."

ROTHWELL'S
WOOL AND BLOOD MANURE, for sale at
R. L. ALLEN'S, 191 Water-st., New-York,
and other Agricultural Warehouses.

BEST Garden Engine—complete and ready for use for $24. JAS. M. EDNEY, 56 John-st., N.Y



NEW-YORK STATE AGRICULTURAL WORKS,

WHEELER, MELICK & Co., Proprietors.

Double Power, and Improved Combined Thresher and Winnower, in operation.

Manufacturers of Endless Chain Railway Horse Powers, and Farmers' and Planters' Machinery for Horse Power use, and owners of the Patents on, and principal makers of the following valuable Machines:

Wheeler's Patent Single Horse Power,
AND
OVERSHOT THRESHER WITH VIBRATING SEPARATOR.

This is a One Horse Machine, adapted to the wants of medium and small grain growers. It separates grain and chaff from the straw, and threshes about 100 bushels of wheat or twice as many oats per day, without changing horses—by a change nearly double the quantity may be threshed.....Price $128.

Wheeler's Patent Double Horse Power,
AND
OVERSHOT THRESHER WITH VIBRATING SEPARATOR.

This Machine is like the preceding, but larger, and for two horses. It does double the work of the Single Machine, and is adapted to the wants of large and medium grain growers, and persons who make a business of threshing.....Price $160.

Wheeler's Patent Double Horse Power,
AND
IMPROVED COMBINED THRESHER AND WINNOWER.
[SHOWN IN THE CUT.]

This is also a Two Horse Machine, and has been much improved during the past season; it threshes, separates the grain from the straw, and winnows it at one operation, at the average rate of 150 bushels of wheat and 300 bushels of oats per day. In out door work, and for persons who make a business of threshing, it is an unequaled Machine.....Price $245.

ALSO CLOVER HULLERS, FEED CUTTERS AND SAWING MACHINES.

Our Horse Powers are adapted in all respects to driving every kind of Arricultural and other Machines, that admit of being driven by Horse Power, and our Threshers may be driven by any of the ordinary kinds of Horse Powers in use—either are sold separately.

☞ To persons wishing more information and applying by mail, we will forward a circular containing such details as purchasers mostly want—and can refer to gentlemen having our Machines in every State and Territory.

Our firm have been engaged in manufacturing this class of Agricultural Machinery 23 years, and have had longer, larger and more extended and successful experience than any other house.

All our Machines are warranted to give entire satisfaction, or may be returned at the expiration of a reasonable time for trial.

☞ Orders from any part of the United States and Territories, or Canadas, accompanied with satisfactory references, will be filled with promptness and fidelity; and Machines, securely packed, will be forwarded according to instructions, or by cheapest and best routes. WHEELER, MELICK & Co.,
ALBANY, N. Y.

SCHOOLEY'S PATENT PRESERVATORY.

FOR PRESERVING MEATS, FRUITS, VEGETABLES, the products of the Farm and Dairy, and all perishable articles, WITHOUT DAMAGE from heat and moisture in SUMMER, OR COLD IN WINTER.

Invaluable for Farmers, Grocers, Butchers, Candle and Oil Makers, Hotels, Restaurant Keepers, AND IS THE BEST DAIRY OR MILK HOUSE IN THE WORLD.

Milk can be kept sweet for weeks in Summer and Butter made with equal facility the entire season.

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Market Review, Weather Notes, &c.

AMERICAN AGRICULTURIST OFFICE, NEW-YORK, March 26, 1858.

THE WHOLESALE PRODUCE MARKETS have been freely supplied with Flour and Corn during the past month. The demand for each has been pretty brisk, and prices have fluctuated very slightly. The principal purchasers of Flour have been home dealers. Corn was most sought after by shippers. The receipts have been to a fair extent, and as river navigation has been partially resumed, a livelier movement in produce is anticipated. It is reported from Albany that the State Canals will be opened for navigation on or before April 20. The ice has left the upper Mississippi, so that from St. Paul to New-Orleans, that great artery of trade is open. Its chief branches, the Missouri and the Ohio, have been navigable for weeks. Even the more northern lakes are opening. Collingwood Harbor, on Lake Huron, is reported clear of ice. As to the Erie Canal, the Commissioners, in their recent report to the Legislature, give assurance of a seasonable commencement, as the causes which so greatly retarded navigation last year will not be operative this Spring. This early resumption of inland navigation will enable those in the interior, having produce to sell, to send it to market freely. Hence, buyers look for increased receipts here, and do not manifest any disposition to purchase, at present, any more than they immediately require. Wheat, especially prime, has been very scarce and has advanced, but the demand for it, at the improved prices, has been limited. Rye, Barley and Oats have been sparingly dealt in at reduced quotations....Cotton has been in active demand, and it closes firmly....Provisions have been moderately inquired for. Prices show no important change....Hay opened with a good demand at buoyant prices. Mild weather and the partial resumption of inland navigation have, however, depressed the market so that buyers now have any existing advantage....Hemp and Hops have attracted considerable attention, at somewhat firmer prices....Grass Seeds have been in slack request, and have tended downward....A slightly improved demand has prevailed for Tobacco and Wool, at about former quotations....Groceries have been freely dealt in, at advancing prices....Other articles of produce have presented no important variation from the previous month.

CURRENT WHOLESALE PRICES.

	Feb. 23.			March 26.		
FLOUR—Com'n to Extra State	$4 25	@	4 65	$4 25	@	4 60
Common to Fancy Western	4 30	@	4 65	4 30	@	4 25
Extra Western	4 45	@	7 50	4 35	@	7 00
Fancy to Extra Genesee	4 40	@	7 00	4 35	@	7 00
Mixed to Extra Southern	4 75	@	8 25	4 70	@	8 25
RYE FLOUR—Fine and Super	3 60	@	4 00	3 00	@	3 75
CORN MEAL	3 00	@	3 50	3 00	@	3 50
WHEAT—Canada White	1 10	@	1 25	1 40	@	1 35
Western White	1 10	@	1 40	1 18	@	1 50
Southern White	1 15	@	1 42½	1 25	@	1 50
All kinds of Red	95	@	1 22	1 00	@	1 23
CORN—Yellow, new	70	@		66½	@	69
White, new	70	@	71	66	@	68
OATS—Western	45	@	47	44	@	46
State	45	@	46	42	@	45
Southern	28	@	40	25	@	35
RYE	70	@	72½	68	@	70
BARLEY	70	@	78	60	@	70
White Beans	1 37½	@	1 40	1 31¼	@	1 37½
Black-eyed Peas, per 2 bush	3 25	@		3 12½	@	3 25
HAY, in bales, per 100 lbs	55	@	80	45	@	65
COTTON—Middlings, per lb	11¾	@	12	11¾	@	12
RICE, per 100 lbs	2 75	@	3 75	3 00	@	4 00
HOPS, per lb	4½	@	9	4½	@	8½
PORK—Mess, per bbl	16 50	@	16 65	16 65	@	16 70
Prime, per bbl	13 25	@	13 40	13 50	@	
BEEF—Repacked Mess	12 00	@	13 50	12 00	@	13 50
Country mess	9 50	@	11 00	10 00	@	11 00
" prime	6 50	@	7 50	7 00	@	8 00
HOGS, Dressed, per lb	6	@	7¾	6¾	@	7½
Lard, in bbls, per lb	9¾	@	10	9¾	@	10½
BUTTER—Western, per lb	13	@	17	14	@	20
State, per lb	16	@	25	17	@	24
CHEESE, per lb	6¾	@	8¾	8	@	10½
EGGS—Fresh, per dozen				14¾	@	15
Limed, per dozen				8	@	10
FEATHERS, Live Geese per lb	40	@	46	40	@	45
SEED—Clover, per lb	8¾	@	9¾	7	@	8½
Timothy, mowed, per bushel	2 00	@		2 00	@	2 35
Timothy, reaped, per bushel	2 25	@	2 50	2 25	@	2 50
Flax, Am. rough, per bush	1 35	@		none selling		
SUGAR, Brown, per lb	4¾	@	7	5¾	@	7⅜
MOLASSES, New-Orleans, prgi	30	@	33	31	@	33
COFFEE, Rio, per lb	9½	@	11¾	9½	@	11⅜
TOBACCO—Kentucky, &c. per lb	6¾	@	10	6	@	17
Seed Leaf, per lb	9	@	35	9	@	35
WOOL—Domestic fleece, per lb	37	@	45	37	@	45
Domestic, pulled, per lb	20	@	32	20	@	32
HEMP—Undr'd Amer'n pr ton	100	@	110	100	@	110
Dressed American, per ton	140	@	165	140	@	170
TALLOW, per lb	11	@		10	@	10¼
OIL CAKE, per ton	35	@	37	36 00	@	
POTATOES—Junes, per bbl	2 50	@	2 75	2 50	@	3 00
Mercers, per bbl	3 25	@	3 75	3 25	@	4 00
Peach Blow, per bbl	3 00	@	3 25	3 50	@	4 00
Carters, per bbl	3 50	@	4 00	3 50	@	4 00
ONIONS—Red, per bbl	1 50	@	1 75	2 00	@	2 25
White and yellow, per bbl	1 75	@	3 00	2 50	@	4 00
CRANBERRIES—Per bbl	10 00	@	12 00	11 00	@	14 00
APPLES—Common, per bbl	2 50	@	3 00	3 00	@	3 50
Spitzenburgs, per bbl	5 00	@	6 00	5 00	@	6 00
Greenings, per bbl	3 50	@	4 00	4 00	@	4 50
TURNIPS—Ruta bagas, per bbl	50	@	62	62	@	75
CABBAGES—Per 100	5 00	@	6 00	4 00	@	6 00
CELERY—Per dozen	1 00	@	1 50	1 25	@	1 50
POULTRY—Fowls, per lb	10	@	15	10	@	15
Ducks, per lb	18	@	21	18	@	21
Guinea Fowls, per pair	44	@	50	44	@	50
Turkeys, per lb	12	@	16	13	@	16
Geese, per lb	10	@	11	9	@	11
Pectridges, per pair	1 00	@	1 25	1 00	@	1 25
Prairie Hens, per pair	1 00	@	1 25	75	@	88

The total receipts and the total sales of Breadstuffs for 26 business days, ending with to-day, have been as follows:

	Receipts.	Sales.
Wheat-flour, bbls	90,124	257,680
Wheat, bush	29,707	132,650
Corn	662,340	737,000
Rye	———	15,400
Barley	2,831	20,700
Oats	63,756	———

This statement affords the following comparison of the total receipts and sales in each of the last two months:

RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 bus. days last mon.,	128,000	11,660	450,000	——	——	21,000
26 bus. days this mon.,	90,124	29,707	662,340	——	2,831	63,756
SALES.	Flour.	Wheat.	Corn.	Rye.	Barley.	
24 business days last month,	250,386	108,200	570,000	10.650	16,000	
26 business days this month	257,680	132,650	737,000	15,400	20,700	

N. Y. LIVE STOCK MARKETS—BEEVES—Receipts fair for the season, and the demand light through Lent. Prices very low. Receipts and prices for week ending February 24 (2,657), ¼c. advance; March 3 (2,582), ¼c. advance; March 10 (3,539), ¼c. decline; March 17 (2,807), ¼c. decline; March 24 (3,649), ¼c. decline. Decline in 5 weeks 1c. ℔ lb. Total receipts in 5 weeks 15,233. March 24, prices ℔ lb for estimated dressed weight:—Premium cattle, 10¼c.; first quality, 9½@10c.; medium, 8½@9c.; poorer, 6½@7¼c.; average of all qualities, 8c.

SHEEP.—Receipts small, 25,947 for 5 weeks. Present prices about 4½@5¼c. ℔ lb, live weight.

HOGS.—Free receipts, selling lower. Present prices 5½@5¾c. ℔ lb, live weight, for corn-fed, and 5@5¼c. for distillery hogs.

THE WEATHER.—Our *Daily Notes* condensed read: February 24, coldest morning of Winter, 0°; 25 to 28, clear, mild, snow about gone. March 1, rain, changing to snow in evening; 2, three inches of snow, clear and cold p. m.: 3, 4, 5, 6, 7, a cold term, thermometer ranging 8° to 15° in the mornings—the 5th the coldest *day* of the season, 8° a. m. and 10° p. m.; 8, heavy northeast snow storm; 9, clear, cool, ten inches light snow on the ground, which nearly disappeared in the warmer days of 10, 11, 12 and 13; 14, 15, heavy fogs and light rain; 16 to 20, clear, warm, pleasant, frost nearly out of ground, buds swelling, robins and other early birds appearing; 26, rain a. m., clear and warm p. m; 22, 23, 24, 25, clear and warm, plowing, taking up trees, &c., going on.

EXTRA PREMIUMS,

offered as a remuneration for time and services to persons procuring and forwarding new subscribers to the *American Agriculturist*. The subscribers obtained will themselves be entitled to receive the seeds offered in our regular list, No. 1 to No. 52. New subscribers sending in their own names will be entitled to the extra premium No, 2, or No. 3 below. ☞ Only *one* of the following three premiums will be given on the same new subscriber.

Premium No. 1.

When any person shall have forwarded *forty* subscribers, for volume XVII, at the lowest club rates (80 cents each) he or she will be entitled to a copy of WEBSTER'S LARGEST SIZE UNABRIDGED DICTIONARY (not the smaller University Edition). The Book will be forwarded to the order of the recipient at his expense for transportation after leaving this city. Its weight (7 to 8 lbs.) will prevent its going by mail.

Premium No. 2.

Any person forwarding new subscribers for volume XVII, either at one dollar each, (or at the club rates in case of the formation of new clubs or additions to those already formed), will be entitled to One Pound of *pure* CHINESE SUGAR CANE SEED of the best quality for *each new* name. The seed will be put up in strong cloth bags and delivered free of expense to any Express Company or to the care of any person in this city. The cost of transportation will of course be borne by the recipient. [Since our last issue we have obtained 50 bushels more of splendid seed, at low rates, which enables us to make the above offer for additions to clubs as well as for single subscribers.]

Premium No. 3.

The varieties of New Seeds, Nos. 53 to No. 70, described on page 101, will be put up in parcels of the size named below. These separate parcels will then all be inclosed in one package, and one of these packages (containing 18 varieties) will be sent, *post-paid*, to any person forwarding a new subscriber for vol. XVII., at *one dollar a year*. EACH new subscriber will entitle the sender to one of these packages. The postage on each package (to be prepaid by the publisher) is 18 to 21 cents, which reduces the net amount received for each to the lowest club rates. ☞ Where clubs are formed, or additions to former clubs are made, and the expense of getting the seeds, by Express or otherwise, is borne by the recipients, the names will be taken at the regular club rates.

[The quantity of the above seeds received this year, is too small to allow of their being offered in the list for general distribution to all subscribers; and furthermore, the labor and expense attending the distribution of the general list first offered, and still continued, is about all that we can undertake gratuitously for the present season. For these reasons, these extra seeds, No 53 to 70, are only offered conditionally, that is, as premiums for new subscribers.]

CATALOGUE OF SEEDS IN EXTRA PREMIUM NO. 3.

(All in one Package.)

53.—Improved Yellow Flat Onion—200 to 300 seeds.
54.—Improved Brown Globe Onion—200 to 300 seeds.
55.—Improved White Globe Onion—200 to 300 seeds.
56.—Mrs. O'Rourke Pea—About 20 peas in a package.
57.—Eugenie Pea—30 to 40 peas in a package.
58.—Napoleon Pea—Same as No. 57.
59.—King of the Marrow Pea—Same as No. 57.
60.—Blue Sickle Pea—Same as No. 57.
61.—Waite's Bedfordshire Prize Cucumber—12 to 15.
62.—Waite's White Cos Lettuce—800 to 1000 seeds.
63.—London Particular Long Scarlet Radish—300 to 400 seeds.
64.—Extra Red Round Turnip Radish—Same as No. 63
65.—Waite's Large Cabbage Savoy—400 to 500 seeds.
66.—Extra London Curled Parsley—700 to 800 seeds.
67.—Intermediate Carrot—very fine flavor—800 to 1000.
68.—Purple-top Scotch, or Bullock Turnip Do.
69.—Green-top Scotch, or Bullock Turnip Do.
70.—Waite's London Purple-top Swede Turnip Do.

N.B.—We have, of some kinds of the above seed, only enough to make up some 2000 complete packages (18 varieties). Should more than this number chance to be called for, the subsequent packages will contain an assortment of all we then have on hand.

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